

# A short-term equine assisted learning program improves family relationships. A Pilot study.

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Young people with special educational needs and their families were particularly affected by the COVID-19 pandemic, with many parents reporting feeling overwhelmed. This study reports on the outcomes of an equine-assisted learning program piloted in summer 2021, which aimed to improve the wellbeing of families by providing them with a positive group experience. Families attended the Equine-Assisted Learning (EAL) program for either of two sessions, which lasted 2.5 hours each. The Family Relationships section of the Family Quality of Life Questionnaire was filled out before and after the program, as well as at a 2-month follow up. Outcomes were also measured using the Strengths and Difficulties Questionnaire, which was filled out by referrers for the young people who were the primary referees to the program. There were 14 families participating in the program, and analysis revealed a significant positive impact on family relationships scores at a total level which was maintained at 2 months follow up, as well as at item level for the majority of items in the short-term. There was also a positive change in Strengths and Difficulties Questionnaire scores for the young people, although this was non-significant. The results of this pilot study show that a short-term family-focussed Equine-Assisted Learning intervention may be effective for improving family relationships, which contribute to individual wellbeing. A larger scale randomised controlled trial would be beneficial to allow the results to be generalised in the future.

**Keywords:** COVID-19, Equine-Assisted Learning (EAL), Family relationships, Family wellbeing, Quality of life

There have been rising rates of poor mental health in the UK since the COVID-19 lockdowns, with Pierce et al. (2020) finding that 27.3% of the UK population were experiencing clinically significant levels of mental distress by April 2020, just one month into what became more than a year of national uncertainty (Gov.uk, 2022). Young people were particularly affected by the sudden changes (Power et al., 2020), and parents of children with special educational needs and disabilities (SEND) reported specific impacts of the COVID lockdowns (Asbury et al., 2021). These included feeling overwhelmed, struggling to take on specialist educational roles during homeschooling, and in particular, the loss of opportunities to see familiar faces for the young people (Asbury et al., 2021). Families referred to this program included at least one participant experiencing challenges engaging with mainstream education, meaning that they required additional support to that which was available through their schools and colleges. The program under study here operates as a service for young people who have challenges engaging with mainstream education and was familiar to some of the participants already as individuals, but not within a family setting.

## Family Quality of Life

Quality of life is a latent variable (Lam, 2010), meaning that it must be measured indirectly via the use of measurement instruments (El-Den et al., 2020), which centre on clearly defined constructs. Quality of life has been shown to be both influenced by family wellbeing, and an influencer of family

wellbeing, as a study by Guevara et al. (2021) found that for adolescents, positive family relationships are supportive to academic performance and health; both of which contribute to quality of life and rely on positive behaviours. In contrast, a large-scale longitudinal study by Alm et al. (2019) found that dysfunctional family relationships are associated with an increased risk of premature death, even when economic factors and parental mental health are controlled for. A longitudinal study by Ravens-Sieberer et al. (2021) supported the idea that family relationships are critical to individual wellbeing. It was found that adolescent mental health throughout Covid-19 was supported by positive family climates, whereas children in families where a parent had mental illness were more likely to experience mental health difficulties themselves during the pandemic.

## The Equine Assisted Service

The Equine Assisted Service (EAS) under study here is best described as an Equine Assisted Learning (EAL) program. EAL is defined as services in which participants are supported to develop social and emotional skills through unmounted experiences with horses (Horsesteachingandhealing.com, 2023), sometimes within a family group. Facilitators of the intervention should have a professional background in either education or the equine industry, and work with participants to support them through a range of experiences with horses (Wood et al., 2021), from basic interactions (such as grooming) to leading activities. The activities are selected by facilitators in the moment to assist participants in making positive changes: for example, a nervous participant may be encouraged to complete an activity they find challenging, helping to build their confidence, or boisterous participants might be encouraged to learn a skill from a quieter peer, developing their ability to respect others along with developing the other participant's ability to communicate effectively. The

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activities also offer an opportunity for coaching by facilitators, including encouraging participants to use adaptive emotion regulation strategies such as reappraisal (Gross, 2002), or taking a quiet moment when needed (Restubog et al., 2020).

The ability to choose activities which act as a catalyst towards positive change relies on facilitators having excellent soft skills, such as taking a flexible, inclusive, and needs-focussed approach to facilitating. These attributes have emerged from the literature as particularly important for educators working with SEND students (Caeiro-Rodríguez et al., 2021), and are well integrated with Equine-Assisted Learning models. Rentko et al. (2022) found that participants of an EAL study described the intervention as a safe space to share anxieties and grow, completing progressively more complex equine-handling activities across a semester.

Research by Killian et al. (2017) into the development of vicarious resilience developed by professionals working with trauma survivors supports this as a potential mechanism of change, finding that client-inspired hope and increased self-awareness were factors developed in professionals by connecting with clients. In the EAL context, participants may draw hope and self-awareness from their connections with rescued equines. These reflective processes could support the development of tragic optimism (Leung, 2019) which may provide a buffer against negative life experiences, such as those experienced by many families during COVID-19 (Leung et al., 2019).

### **Efficacy of Equine Assisted Learning Programs**

A qualitative study found EAL to be effective for supporting the social-emotional development of young people at risk of school failure (Saggers & Strachan, 2016). Resilience, confidence, and communication skills were described as particularly improved, with participants feeling better able to interact with other people after the 8-week intervention. These qualitative findings are also supported by a randomised controlled trial by Pendry and Roeter (2013), which found that an 11-week EAL program significantly improved children's social competence.

A qualitative study of an EAL program by Watson (2019) found 4 themes supporting change within a family when parents watched their child take part in an EAL program. These themes included "A chance to shine" and "Seeing is believing", which describe how parents are able to see their children in a new light and believe in the possibility of change through attending EAL programs with their children. Horses respond to participant changes in the moment, as described in the sub-theme "Instant feedback", meaning that both participants and parents are able to immediately see and feel the impact of changes to participants' behaviour. This positive feedback loop can help to rapidly build new behaviours for participants and help parents to understand how their children can both act and feel in new, positive ways.

EAL interventions have also been found to improve outcomes for families. A large-scale longitudinal study by Hemingway and Sullivan (2022) found a significant reduction in domestic violence following a short EAL program, even when the program was attended by only one member of a family. A lack of parental coaching around how to manage anger and fear has been identified as a

potential family interaction pattern for families affected by domestic violence (Katz & Windecker-Nelson, 2006), which could imply that the emotion coaching commonly found in EAL programs is a platform for change.

This paper presents a pilot study of a short-term family focussed EAL intervention designed to promote wellbeing in disadvantaged families in summer 2021. The program was designed to support young people and their families, as many people experienced difficulties with their mental health following the COVID lockdowns. The aim of this study was to evaluate the efficacy of the program for improving participating families's quality of life, as measured by both self-reported family relationship ratings and referrer-reported behaviours of the participants. It was expected that the short-term intervention would improve both family and individual quality of life in the short and medium term.

## **Method**

This study was a pilot of the Families Fund program offered by HorseWorld in collaboration with Horses 4 Health. Ethical approval was requested and received from the Research Ethics committee of Bournemouth University (39036). Data were collected by facilitators and by referrers from the Families in Focus early intervention team. The data were collected before the program, immediately after the program, and at a 2-month follow up to the program (October 2021). Data were anonymised and sent to the independent researcher, who analysed the data in order to compare participant scores from before and after the program.

### **Participants**

The family structures could be diverse, and included single-parent families, blended families, and adoptive families. Each family had at least one participant who was either attending HorseWorld having been referred previously, or who was referred to the Families Fund program with their family by the Families in Focus team. Inclusion in the pilot was voluntary for all families.

The equines involved in the pilot study ranged between 6 and 22 years old and 11 – 16.2 hands high. There was one mule included. All equines engaged in the courses are cared for within a species-appropriate environment, with time spent outdoors in friendship groups, and free access to shelter. Each equine's workload is monitored and kept light to ensure equine welfare, with daily reports and adjustments made as necessary.

The equines had generally been rescued and were trained by the HorseWorld Training and Rehabilitation team so that they were experienced with the basic handling which would be part of the Families Fund program, including being groomed, tacked up, led and long reined by participants, with minimal assistance from facilitators.

### **Setting**

The program took place at HorseWorld's Discovery program stables and yard. Sessions started with an introduction in a classroom at the side of the yard. The sessions then moved to the stable block, where participants would tie the equines outside their stables and groom them with their families. Facilitators acted as an intermediary, supporting positive interactions between participants and the horses, and between family members. For larger groups, volunteers also interacted with participants and the equines

to ensure a suitable supervision ratio. Activities such as tacking up, leading and long-lining were also undertaken outside of the stables and around the yard as appropriate.

Each session was supervised by at least one facilitator, who had been trained to work with equines and young people of all abilities. This helps them to consistently offer a safe space for learning experiences. A key area of training focus is on the soft skills of the facilitators, including a flexible approach to session delivery, inclusivity and supporting social interactions, and a participant-centred approach to facilitating. Volunteers who supported the sessions were trained and had received safeguarding training and a Disclosure and Barring Service check.

Activities undertaken during the Families Fund program were varied according to the needs of each participant group. Where participants were nervous, facilitators reduced the intensity of activities to ensure welfare of participants and equines – celebrating successes such as becoming confident enough to approach an equine, or learning the parts of the equine’s body at a distance. More confident participants were encouraged to complete more challenging activities, such as tacking up and long-reining; as participant’s skills progressed they were supported in achieving more challenging goals.

Activities undertaken during the Families Fund program included:

**Introductions.** Introduction to equines as prey animals, introduction to equine (personality, background).

**Basic Handling.** Getting to know the equine, putting a headcollar on in the stable with support from facilitators.

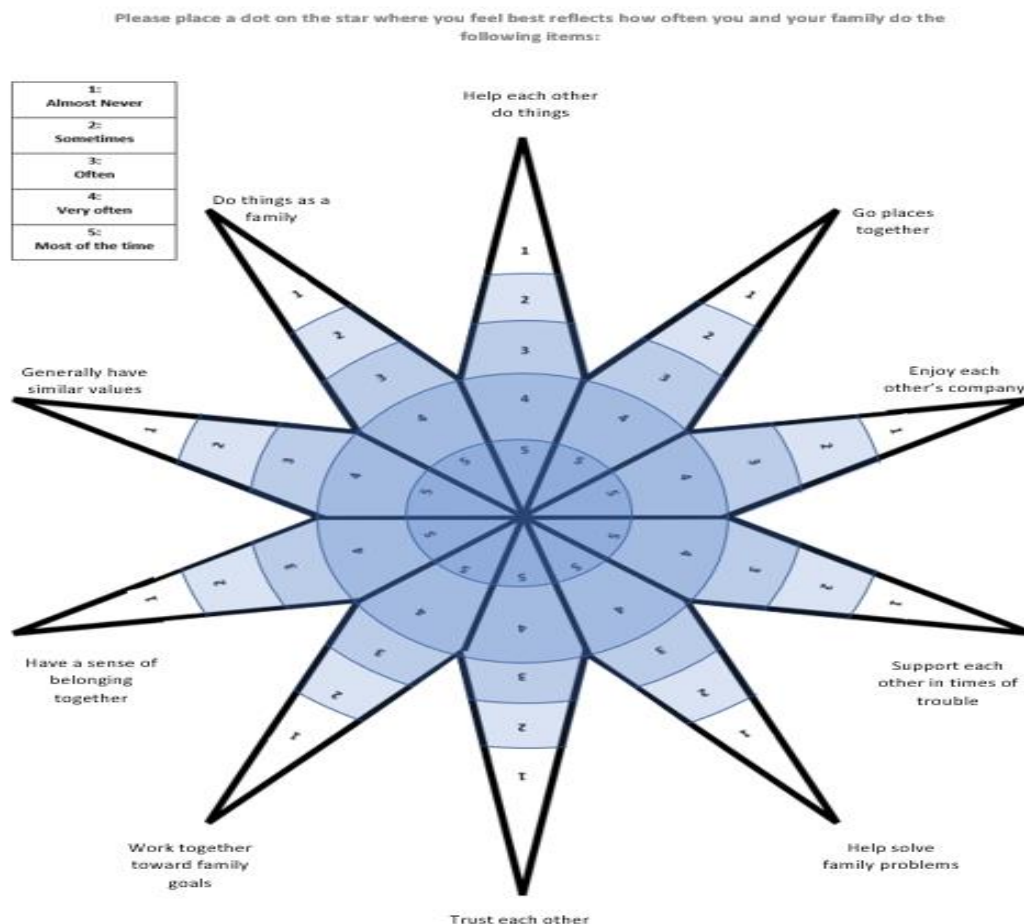
**Grooming.** Understanding the different brushes, grooming, picking out hooves.

**Activities.** Leading, long lining, designing and completing an obstacle course (Session two only).

**Measures**

The programme under study here is designed to improve aspects of quality of life for participating families by providing a positive bonding experience through EAL. Therefore, the construct chosen as an independent variable for measuring the group outcome was the quality of family relationships, as measured by Section 3 of the Family Quality of Life questionnaire (Brown et al., 2006). Families completed the items as a group, using an outcomes star format (“Closeness Star”) with the support of facilitators (Figure 1). The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997) was also filled out by referrers for the key participant(s) in each family at referral and at a 2-month follow up to give a behavioural measure of individual progress outside of the program.

**Figure 1** The Closeness Star: The Family Relationships section of the Family Quality of Life Questionnaire, in outcomes star format



## Procedure

Participants and their families were greeted by facilitators on arrival, and given safety equipment (correctly fitting boots, helmets and gloves). They then gathered in the classroom for introductions and were asked to describe what they hoped to take away from the day. With the assistance of the facilitator, families filled out the Family Relationships (Section 3) items from the Family Quality of Life Questionnaire (Brown et al., 2006) in the form of Closeness Stars (Figure 1) as a group, agreeing on their scores across each factor.

Families then took part in the session activities as a group, which lasted for around 2.5 hours, with facilitators encouraging positive interactions between all members of the group as well as with the equines. At the end of the final session (whether they attended for one or two sessions), families filled out a second Closeness Star with the help of a facilitator. They then returned at a 2-month follow-up to complete a third Closeness Star; this was carried out in the format of a coffee / catch-up session. Referrers were not contacted immediately following the intervention but were instead contacted at the 2-month follow up and asked to fill out a second SDQ for the relevant participants. The anonymised data was then sent securely to the independent researcher.

## Statistical Analysis

Data availability across the families are shown in Table 1. Due to variable data availability across the families, three

sets of analyses were carried out; paired-sample T-Tests for the Family Relationships data at pre- and post-intervention, Wilcoxon Signed-Rank tests for Family Relationships data comparisons at pre-intervention and at a 2-month follow-up, and Wilcoxon Signed-Rank tests for the SDQ data at pre-intervention and at a 2-month follow up. Families were included in analyses where they had a complete set of data for that data type. Families with incomplete data for a data type were excluded (for example, no pre or post-test SDQ scores). The analyses were carried out in IBM SPSS Statistics V26.

The Family Relationships data was analysed as both an aggregate score and at item level using a paired-sample T-test for both overall scores and for each item to compare pre and immediately post-intervention. Family Relationships data collected at the 2-month follow-up was compared to pre-intervention data using a non-parametric test (Wilcoxon signed-rank) due to low participant numbers, as was SDQ data for individuals from prior to the intervention and at a 2-month follow up, also due to low participant numbers.

## Results

### Family Relationships Data

The participants were 16 families, with between 2 and 6 people in each (Table 1).

There was complete data available for 14 of the families at pre-test and immediately post-intervention, meaning that

**Table 1:** Participant Numbers and Data Availability Across Family Groups

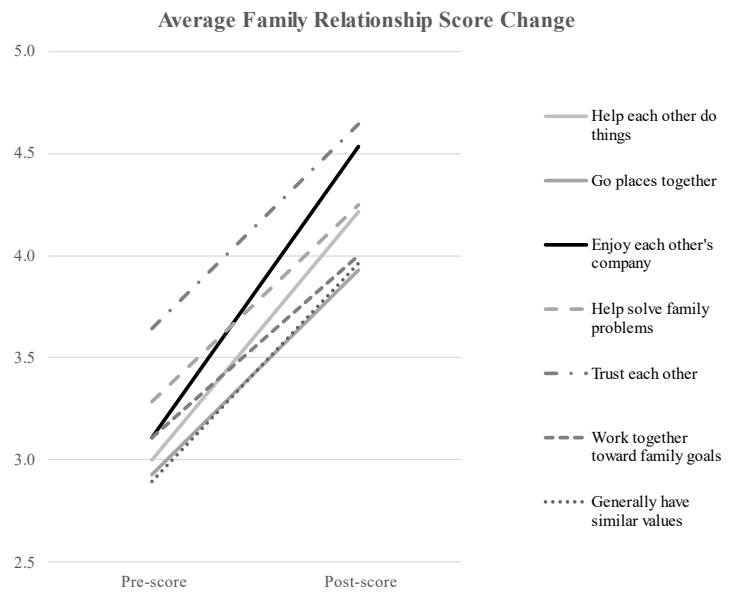
Family No.	Adults	Referred Young People	Other Young People	Total Attendees	Pre-SDQ	Post-SDQ	Pre-Closeness Star	Post-Closeness Star	Follow-up Closeness Star
1	2	2	2	6	Yes	No	Yes	Yes	No
2	1	1	0	2	Yes	Yes	Yes	Yes	No
3	1	2	0	3	Yes	Yes	Yes	Yes	No
4*	0	1	0	1	Yes	Yes	No	No	No
5	1	2	1	4	Yes	Yes	No	No	No
6	1	2	0	3	Yes	Yes	Yes	Yes	No
7	1	1	2	4	Yes	No	Yes	Yes	No
8	1	1	2	4	Yes	No	Yes	Yes	Yes
9	1	1	0	2	Yes	Yes	Yes	Yes	No
10	2	1	1	4	Yes	No	Yes	Yes	No
11	1	1	1	3	Yes	No	Yes	Yes	Yes
12	1	1	0	2	Yes	No	Yes	Yes	Yes
13	1	1	3	5	No	No	Yes	Yes	No
14	2	1	1	4	Yes	Yes	Yes	Yes	Yes
15	1	1	1	3	Yes	No	Yes	Yes	No
16	1	1	1	3	Yes	No	Yes	Yes	Yes
<b>Total Participants</b>	18	20	15	53	>9	9	14	14	5

\* This participant was unable to attend in a family group, therefore their data was excluded from analysis

A paired-sample T-test could be carried out for each of the 8 Family Relationships items from the Closeness Star, as well as the total scores. Table 2 shows the results of the paired-samples T-Tests, and Figure 2 demonstrates the changes for each item. There was a significant increase in overall score between pre- and post-test ( $t(13) = -5.805, p < .001, d = 1.696$ ), as well as many of the individual items. No items were found to have significantly lower scores following the intervention. For 5 families, family relationships data was also available at a 2-month follow up.

A Wilcoxon signed-rank test found that the significant increase in total family relationship scores was maintained between pre-test and the 2-month follow up scores, as shown in Table 3, as well as a significant increase in working together towards family goals. Scores for all other family relationship items either increased or remained the same, though these differences were not significant.

**Figure 2**  
Change in scores across Family Relationships items between pre and immediately-post intervention.



**Table 2:** Results of Paired-Sample T-Tests on Family Relationships Items Post-Intervention

*Paired-Samples T-Test Results*

Items	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	<i>t</i>	<i>df</i>	Sig. (2-tailed)	<i>d</i>
Total scores	-7.786	5.018	1.341	-10.683	-4.888	-5.805	13	0.000	1.696
Help each other do things	-1.214	0.871	0.233	-1.717	-0.712	-5.218	13	0.000	1.281
Go places together	-1.000	1.316	0.352	-1.760	-0.240	-2.844	13	0.014	0.733
Enjoy each other's company	-1.429	1.107	0.296	-2.068	-0.789	-4.829	13	0.000	1.542
Support each other in times of trouble	-0.429	1.016	0.272	-1.015	0.158	-1.578	13	0.139	0.551
Help solve family problems	-0.964	1.447	0.387	-1.800	-0.129	-2.493	13	0.027	0.748
Trust each other	-1.000	1.193	0.319	-1.689	-0.311	-3.137	13	0.008	1.001
Work together toward family goals	-0.893	1.196	0.320	-1.583	-0.202	-2.794	13	0.015	0.937
Have a sense of belonging together	0.357	1.099	0.294	-0.278	0.992	1.215	13	0.246	0.486
Generally have similar values	-1.071	1.191	0.318	-1.759	-0.384	-3.367	13	0.005	0.888
Do things as a family	-0.143	0.929	0.248	-0.679	0.393	-0.576	13	0.575	0.136

**Table 3:** Results of Wilcoxon Signed-Rank Tests on Family Relationships Items at a 2-Month Follow-Up**Wilcoxon Signed Rank Test Results**

Items	Pre		Post		Z	p
	M	SD	M	SD		
Total Family Relationships	38.300	1.037	43.700	1.718	-2.023 <sup>b</sup>	0.043
Help each other do things	3.700	0.837	4.400	0.894	-1.342 <sup>b</sup>	0.180
Go places together	3.500	1.369	4.400	0.548	-1.732 <sup>b</sup>	0.083
Enjoy each other's company	3.700	1.396	4.400	0.894	-1.342 <sup>b</sup>	0.180
Support each other in times of trouble	4.800	0.447	5.000	0.000	-1.000 <sup>b</sup>	0.317
Help solve family problems	3.800	1.304	4.800	0.447	-1.342 <sup>b</sup>	0.180
Trust each other	4.400	0.548	4.400	0.894	.000 <sup>c</sup>	1.000
Work together toward family goals	3.200	0.570	4.400	0.548	-2.032 <sup>b</sup>	0.042
Have a sense of belonging together	4.500	0.500	4.600	0.894	-.368 <sup>b</sup>	0.713
Generally have similar values	3.200	0.908	4.600	0.894	-1.826 <sup>b</sup>	0.068
Do things as a family	4.000	1.000	4.400	0.894	-1.000 <sup>b</sup>	0.317

**Strengths and Difficulties Questionnaire Data**

Referrer ratings on the SDQ were analysed using Wilcoxon's Signed Rank test, as N = 9. No differences were found to be significant as  $p > .05$  in all cases; see Table 4

**Table 4:** Results of Wilcoxon Signed-Rank Tests on SDQ Scores**Wilcoxon Signed Rank Test Results**

Items	Pre		Post		Z	p
	M	SD	M	SD		
Total	16.111	7.373	13.889	5.667	-.833 <sup>b</sup>	0.405
Externalizing	9.222	4.969	8.111	3.790	-.848 <sup>b</sup>	0.396
Internalizing	8.889	4.045	8.111	3.822	-.923 <sup>b</sup>	0.356
Emotional Problems	3.667	2.398	3.222	2.489	-.343 <sup>b</sup>	0.732
Conduct Problems	4.000	2.693	3.222	2.167	-1.160 <sup>b</sup>	0.246
Hyperactive	5.222	3.032	4.889	2.205	-.425 <sup>b</sup>	0.671

for details.

**Discussion**

The findings of this pilot study indicate that a short-term, families focussed program could be effective for improving family quality of life by improving family relationships, both in the immediate term and at follow-up. Skills modelled and supported during the program included communication skills, working to productively manage difficult emotions, and helping family members with tasks. The findings of the present study are aligned with components of the Family Quality of Life questionnaire (Brown et al., 2006), such as "Enjoy each other's company" and "Work together toward family goals", leading to significant improvements across these factors. The Family Quality of Life questionnaire has been found to have strong concurrent validity with other measures of family wellbeing (Perry & Isaacs, 2015), indicating that interventions which improve scores on the Family Quality of Life Questionnaire are likely to improve overall family wellbeing. Findings from Asbury et al. (2021) that families of young people with special educational needs or disabilities were particularly impacted by the pandemic highlight the importance of access to interventions which improve family wellbeing following Covid-19 for those families. This study found that family relationships are improved by a short-term EAL

program, indicating that EAL could play a role in helping families recover from adverse situations, such as COVID-19.

This pilot study also indicated that aspects of family wellbeing could continue to improve between the sessions and a 2-month follow-up, despite an extremely short intervention period of either one or two sessions. EAL programs are often resource-intensive, carried out over a longer time period of several months, as per Sagers and Strachan (2016). Further research could determine whether extended participation is generally necessary, or whether positive outcomes can be achieved with fewer sessions. This could help to improve accessibility - though participant experience must also be considered as for some participants, building consistency, familiarity and confidence within an out-of-home environment is also of value (Asbury et al., 2021).

Equine assisted services programs often focus on improving outcomes for individuals, for example, supporting children to develop emotional competence (Pendry & Roeter, 2013). However, this study found that there was a positive effect on family relationships when families attended as a group. Facilitators were able to support families to develop more positive interaction styles through the activities in the intervention, which was demonstrated by significant improvement on items such as "Work together towards family goals" and "Trust each other". Family relationships have been shown to impact individual wellbeing (Ravens-Sieberer et al., 2021), therefore the findings of this study indicate that working with family groups may provide an alternate route to improving individual wellbeing. In some cases, this may be more appropriate than working with individuals as families can be supported to learn the tools and skills involved in developing and maintaining positive relationships, thereby improving and maintaining each other's wellbeing within the family group. Future research could investigate whether changes made through EAL show improved maintenance when families are involved in at least one session.

**Limitations**

This study worked with a small convenience sample; meaning that generalizability may be limited as there was no

randomisation or comparison group. The positive results of this pilot study indicate that there is scope for a randomised controlled trial with a greater number of participants in future. A study with increased numbers of participants would help to validate the findings of this pilot study, as it would be possible to employ a greater degree of parametric testing across measures such as the SDQ and the follow-up family relationships measures, as well as to aid differentiation between potentially impactful factors such as whether families attended for one or two sessions and family size. The finding that family relationships significantly improved in the immediate term, even with low numbers of participants, indicates a potentially large effect size which could be further investigated.

Another limitation of this study is that only the family relationships section (Section 3) of the Family Quality of Life Questionnaire (Brown et al., 2006) was included as an outcome measure, therefore improvements to family relationships may not materially impact family quality of life when other factors such as access to financial resources are considered. The findings of this study are therefore limited to improving family relationships, which are likely to contribute to family quality of life (Asbury et al., 2021; Guevara et al., 2019).

A final limitation is that although families were referred to the program, they also volunteered to take part in the research. Therefore although the participants were part of an opportunity sample, the study may still be vulnerable to a selection bias, as families who felt that taking part in an equine-assisted program would help them may have been more likely to choose to take part. This issue could be further investigated with the use of a randomised controlled trial with a broader range of participants.

## Conclusions

The findings of this study indicate that a short-term equine-assisted learning intervention focussed on improving family wellbeing may be effective for improving family relationships, which are known to contribute to family wellbeing. This equine-assisted program was effective within a small number of sessions; further research could identify whether this represents an opportunity to improve accessibility. The findings of this study also indicate that equine-assisted learning can be effective for family groups, which could indicate an important mechanism of support for equine-assisted service users.

## Disclosure statement

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