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Chapter

Perspective Chapter: Mind the Gap – Young People's Mental Health and Equine Assisted Interventions

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Abstract

Increasing numbers of adolescents are experiencing poor mental health, whether struggling with diagnosed conditions such as anxiety and depression, or simply suffering from poor wellbeing. Many have attributed this to changes experienced during the COVID-19 pandemic; however, it is likely that there are other factors which are also leading to difficulty maintaining positive mental health. A growing number of Equine Assisted Services (EAS) are being developed to meet needs for mental health support, ranging from therapeutic riding to equine assisted psychotherapy. This chapter will focus on non-riding interventions and include research primarily from equine assisted learning and equine assisted therapy programs. The authors acknowledge that there are differences between the two, but also that these modalities share several similarities which are relevant to discuss here. Four key aspects of EAS which could be supporting the development of positive mental health will be examined; the culture of EAS, key features of EAS, experiential learning of emotional skills, and common outcomes of EAS, followed by the limitations and a discussion of the current research in the area. This will indicate factors which might be missing from the lives of adolescents which could have implications for broader wellbeing and mental health programs.

Keywords: equine assisted, mental health, adolescent, wellbeing, equine facilitated

1. Introduction

1.1 What is positive mental health?

Mental health is comprised of many factors; the World Health Organization defines positive mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" [1]. This definition encompasses a range of factors, which are themselves determined by other factors across many different life circumstances and skillsets. Circumstances such as family background, personal emotional regulation skills, and social support can all impact mental health and wellbeing, with Fusar-Poli et al. [2] suggesting the following core domains:

"(i) mental health literacy, (ii) attitude towards mental disorders, (iii) self-perceptions and values, (iv) cognitive skills, (v) academic/occupational performance, (vi) emotions, (vii) behaviours, (viii) self-management strategies, (ix) social skills, (x) family and significant relationships (xi) physical health, (xii) sexual health, (xiii) meaning of life, (xiv) and quality of life" [2].

Further discussions around wellbeing describe a state of "flourishing", defined as when both hedonic and eudaemonic wellbeing are satisfied. A study [3] found that subjective wellbeing was increased by striving towards eudaemonic (meaning & purpose), but not hedonic (pleasure) goals. The connection between flourishing and positive mental health was supported by a large-scale longitudinal study [4] in which it was found that participants with flourishing mental health at one time point were less likely to develop both first incidence and recurrent mood disorders and anxiety disorders during the following 3 years. Given the close relationship between types of wellbeing and the development and maintenance of positive mental health, this chapter will discuss factors which support both mental health and wellbeing when considering the impact of EAS on developing and maintaining adolescent's mental health.

1.2 What can support the development and maintenance of adolescent mental health?

The mental health of adolescents is particularly vulnerable to external factors, as they often lack the agency of adults in terms of making choices such as who to live with and what to do in their day-to-day life. A study [5] found that positive family relationships support both academic performance and health; in contrast, the development of mental health disorders such as depression [6] and social anxiety [7, 8] can be impacted by family factors. The relationship between adolescent's mental health and their family environments can therefore be either supportive or detrimental to their wellbeing, as is also evidenced by the efficacy of family-focussed programs for common mental health disorders [9].

As adolescents have little control over their family environment, learning skills such as emotional regulation, healthy communication and resilience can help to support wellbeing throughout the teen years. It is often expected that such skills can be learned in family environments through social modeling [10]. However, where this is not possible, for example in families where parents themselves are struggling, young people may not easily form behaviors and mindsets which contribute to positive mental health, such as adaptive emotional regulation strategies – for example, self-compassion [11]. This can be caused by a wide range of factors, including parents/carers who struggle to accept negative emotions [12], or a lack of coaching around managing negative emotions [13]. Where this is the case, it is important that adolescents are able to learn strategies for developing and maintaining positive mental health elsewhere.

Another area where young people may learn to develop positive mental health is through the education system – however, this relies on a supportive cohort of students and skilled teachers, who are themselves educated and able to educate others around positive mental health. A study [14] found that that positive mental health and resilience can be increased through a school-based social-emotional learning program, indicating that these factors, often viewed as invariant within an individual, can be improved through learning. A meta-analysis also found that social and emotional education programs in schools are effective across a variety of factors in the short term (up to 6 months) – but maintenance over the long-term tended to be poor [15].

In addition, in the UK the Child & Adolescent Mental Health Services (CAMHS) are struggling and in most areas overwhelmed by need and therefore often not able to see young people for 6–12 months after referral [16].

With the potential for these gaps in mental health education and support, many adolescents are struggling. A systematic literature review [17] following the effect of the COVID-19 pandemic on adolescent mental health found that loneliness, anxiety and depression were common mental health impacts. Young people with mental health difficulties are often referred to services for support, such as CAMHS, with rates of referrals for psychiatric assessment almost doubling between 2020 and 2021 [18]. However, in some cases, mainstream therapies such as Cognitive Behavioral Therapy (CBT) or psychotherapy are rejected by the young people, leading to dropout [19], thereby reducing efficacy of treatment delivery [20]. It is these participants who are often referred to Equine Assisted Services (EAS) due to refusal to engage with anything else; bonding with the horses appears to act as an intrinsic motivator for many participants [21].

1.3 What can the efficacy of equine assisted services reveal about adolescent mental health needs?

This chapter will compare observations from equine assisted programs with research surrounding factors which positively and negatively influence mental health. This will reveal ways in which EAS could be acting as a space for adolescents to develop socio-emotional skills which may otherwise be overlooked in home circumstances or school environments. Where research exists which specifically investigates delivery factors within equine assisted learning programs, it will be cited; otherwise, studies from adjacent areas of research such as social work, psychology and public health will indicate likely efficacy.

In this way, the needs of young people which may be unmet within other societal structures in the twenty-first century may be revealed, highlighting features which could be integrated into broader settings (such as school, or extra-curricular activities) to support the mental health of young people.

These needs will be divided into four groups; firstly, the EAS program culture, which often holds similarities across programs and provides key social learning opportunities through modeling positive behaviors and group facilitation. Secondly, features of the activities themselves will be examined, as spending time around horses takes place in a specific setting, with specific aspects of interactions with the horse contributing to improved wellbeing. Experiential learning of emotional skills will also be examined, as a core feature which could be leading to positive changes for participants within EAS. And finally, common outcomes of EAS programs will be discussed in terms of their contribution to positive mental health, as many act indirectly to support mental health outside of programs.

1.4 What are equine-assisted services?

Equine assisted services (EAS) are offered in many ways; some focus on therapeutic riding which may mean different things in an international context and may engage with individuals living with disability or individuals living with a specific physical or psychological problem. Others offer equine therapy or psychotherapy with each session including a registered therapist (psychotherapist, occupational therapist, or physiotherapist) and a horse most commonly either at liberty or with the horse on

a lead rope. While another group focus on learning horse care, developing the wellbeing of the participants through taking part in the associated activities.

The largest growing group in the UK offer quine assisted learning (EAL), with learning to communicate with the horse being the focus. Participants also learn about the horse as a prey animal and their behavior and habits as a key part of programs which may also include some general horse care. There are growing groups within EAS, two of which are international; HETI, Horses in Education and Therapy International and PATH International. Both these groups are moving towards offering membership for equine practitioners and education on how to provide EAS.

2. How do equine assisted services improve adolescent mental health?

2.1 The culture of equine-assisted services

Equine-Assisted Services (EAS) aim to develop participants wellbeing through experiential learning in relation with the horse, facilitators, and other participants – depending on the format of the intervention. This relational approach to personal growth and learning can underpin transformative change for both individuals and communities [22] and creates a culture of emotional safety in which to learn. A qualitative study [23] operationalized components of emotional safety within an EAS program through a series of interviews with participants of an EAL program for at-risk youth. Four categories of emotional safety were identified:

Self-esteem: Having a self-perception which is positive, e.g., capable, kind

Personal security: A feeling of relaxation & safety

Connectivity: Ability to trust the horses and develop relationships

Respect: Learning to respect, and be respected with the horses.

Each of these aspects have been individually shown to improve wellbeing, from self-esteem to feeling safe, connected, or mutual respect. Further, a lack of these qualities within a person's environment are implicated in negative mental health, such as poor self-esteem and depression [24], indicating that interventions which provide an opportunity to experience connection and positive self-esteem could drive positive mental health. Participants of a study [25] into the impact of an EAL program described feeling as though the program offered a safe space to grow – supporting the idea that a culture of emotional safety is important for personal development to occur.

The emotional safety experienced by participants within EAS is not facilitated by interactions with the horse alone, or the specific actions of facilitators, but by the general culture of EAS organizations. A compassionate approach is taken to working with the horses, with many organizations preferring to use elements of natural horsemanship, or otherwise recognizing the horse as a sentient being with experiences worthy of consideration. By learning to provide this safe space for the horse, participants feel safe to explore their own experiences - for example, recognizing when they may feel overwhelmed and require a time out, or need to engage in an energetic activity before feeling calmer [26]. In this way, learning to have compassion for the horse translates to learning to have compassion for themselves – an important factor in developing and maintaining positive mental health [27].

Hamington argues that developing meaningful relationships with specific animals, as is often encouraged within EAS, can be a trigger for developing imaginative care and empathy - in other words, an ethical foundation for social behavior [28].

The ideas of philosopher Merleau-Ponty are cited; that empathy is essentially an embodied experience, as experiences of others are felt within the self [29]. The bidirectionality experienced within the EAS settings could be an important component of EAS cultures as participants both experience receiving empathy and compassion from the facilitator's whist learning to apply it to themselves and to the horses they interact with. In this way, empathy is no longer imaginative but also an embodied state to be reached, engaged with and developed throughout the course of programs. This can then be applied across interpersonal relationships, interspecies relationships, and practical activities such as grooming, whilst being positively reinforced by the facilitators and improved relationships with the horses.

The simple act of recognizing emotions in general as real, valid, and worthwhile to engage with can represent a learning experience for participants who may have adopted maladaptive strategies for managing emotions. These could include suppression [30], which is known to contribute to poor mental health and social outcomes, or externalization which can contribute to challenging behaviors such as aggression or substance abuse [31]. By consistently providing experiences of safely navigating difficult emotions, EAS helps participants to learn self-regulation strategies which work for them, within a positive environment. Working with horses can also provide enough desirable difficulty to facilitate greater retention of learning [32] to cause participants to stretch their emotional resilience, for example by completing tasks they are slightly afraid of (such as picking out hooves) or managing fluctuations in the horse's emotional state by staying calm themselves.

It can often be difficult to motivate learners to engage with tasks which include desirable difficulty, as they are, by nature, difficult. Zepeda et al. acknowledged this difficulty and proposed strategies to help learners to engage with desirably difficult tasks [33]. These included setting appropriate challenges, or where this is not possible, altering the self-perception of learners using positive affirmations. For participants who may have additional learning needs or struggle to regulate their emotions, introducing desirable difficulty at the correct level is particularly important, and something many EAS providers do particularly well.

In many programs, facilitators are experts at recognizing and celebrating achievements consistently throughout sessions – using specific positive terms to reinforce positive personal characteristics, such as "kind", "calm", or "brave". The specificity of these valenced terms could be helping participants to develop a positive self-concept beyond simply good or bad, instead helping them to develop a nuanced understanding of their own personal strengths. Weaknesses are intentionally not referenced here as the majority of programs adopt a strength-based approach [34] focusing on how participants abilities can help them to overcome challenges.

Working within a strengths-based approach helps participants to feel that they are worth knowing, understanding and caring about [35]. This can be an important step for some participants, as their self-concept may be otherwise dominated by weaknesses as they view themselves reflected in difficulties attending school, making friends, or staying out of trouble. Positive moral self-concept can predict prosocial behavior [36]; EAS programs help participants to relax into a positive experience of both the external environment and themselves by offering a space in which participants can achieve personal goals which are set flexibly according to their motivation and ability in the moment.

Negative self-concept has been found to predict the severity of adolescent depression, whilst those with fewer symptoms of depression were found to have a more positive self-concept [37]. The shifting self-concept as determined by the interplay between

external circumstances and internal beliefs [38] has potential to be a strong driver of healing within a secure, positive environment such as that provided by EAS programs.

2.2 Features of EAS

In this section, features of EAS which have been shown to drive positive mental health impacts in any setting will be examined within the context of equine assisted services. There is a relative lack of literature examining specific features of EAS programs compared with other programs – therefore research will be generalized to EAS from other research around program or lifestyle factors which contribute to positive mental health.

Equine assisted services tend to take place outdoors, in a natural or semi-natural setting (such as an arena set amongst fields, or activities which take place in farm buildings). Time spent in these settings is likely to hold benefits, even without features of EAS such as facilitator skill or interactions with the horses. A study [39] found that time spent amongst nature for urban adolescents positively correlated with their mood, whilst another found that access to urban green space is associated with reduced distress [40]. These findings support the idea that the setting of EAS is conducive to positive mental wellbeing for adolescents without clinical conditions, but who may simply require some support to build and maintain positive mental health – for example during transitional periods or challenges.

Other studies have found reductions in symptoms for participants diagnosed with conditions which may impact their mental health or lead to behavioral concerns. For young people diagnosed with ADHD, playing in green spaces rather than indoors or outdoors play areas was associated with milder symptoms in one study [41] – and that hyperactive participants benefited from green spaces which were more open. Similarly, a study using structural equation modeling [42] suggested that sensory over-responsivity could be a driver of anxiety for people with high levels of autistic traits and suggested that neutral environments could help to prevent and manage anxiety. EAS programs are often conducted between stable-yards and arenas, which are usually neutral spaces without loud noises or bright lights (partly due to the innate sensitivity of horses). These may be helping to calm participants with hypersensitivity, as they are able to focus on tasks or simply enjoy being in a peaceful environment.

Whilst participants are in these settings, the variety of activities offered tend to be gently aerobic, such as grooming, mucking out, and leading horses. A systematic review [43] found a positive relationship between physical activity and dopamine, implying that physical activity is a valuable component of programs aiming to improve mental health. Dopamine also plays a role in reinforcement learning [44], meaning that activities which increase dopamine could help to prime participants to learn and retain new skills, such as self-regulation strategies, more effectively.

Another aspect of EAS which lends itself to enhanced learning outcomes is the precise application of desirable difficulty employed by facilitators, and available within the environment. The nature of working around horses means that tasks can often be modified to help participants feel comfortable, for example a participant who is unable to engage with horses at all may be able to complete tasks such as mucking out or talking about relationships between horses in a field. Conversely, a participant who is non-verbal might be perfectly able to engage with connective activities such as grooming or leading the horses. It is also frequently found by facilitators that a participants' desire to connect the horses sparks intrinsic motivation for participants who may struggle to engage with other programs.

Participants [45] reported several ways in which their connection with the horses helped them, with all participants describing their experience with the horse in positive terms. The relationship with the horse was described as key to emotional changes and shifts in self-perception such as feeling trusted and accepted and having more faith in themselves. The unspoken communication between horse and handler can create a bond described as parallel to a therapeutic alliance, which has been shown to mediate change across therapeutic programs [46] and is felt to contribute to recovery from trauma and associated mental health issues in an equine assisted setting [47].

Although the mechanism of action of EAS is still under study, it is generally accepted amongst practitioners that the relationship with the horses is a key contributor to the efficacy of programs. This is supported by findings in a qualitative study [48] which found that children involved in an EAS program were more likely to describe their experiences with the horses than the facilitators, indicating that the horses are primary agents of change. Another relationship-oriented feature programs which could be facilitating change is that EAS programs often work with rescue horses. Facilitators of such programs refer anecdotally to the backgrounds of the horses as a key feature which inspires positive changes in the participants, for example by discovering that it is possible to recover trust, even after mistreatment. A study [49] found that vicarious resilience is commonly developed amongst professionals working with trauma survivors. It is likely that in some cases, participants of EAS develop resilience and hope through a similar mechanism, drawing inspiration from the stories and responses of the horses.

Skin conductivity responses of participants involved with an equine assisted learning program were analyzed by Hemingway et al. [50], concluding that the opportunity to experience positive outcomes following emotional events could be a contributing factor which leads to change for participants. A description of the experience of "bringing up life" through and during interactions with horses by Smith gives a qualitative account which supports this idea – describing intense interactions which spark inter-affectivity [51]; the basis for primary empathy [52]. This flow of non-verbal communication in which participants feel both accepted and understood, as well as motivated to accept and understand another (the horse) is a feature commonly described by participants and facilitators as an important feature of EAS which differentiates it from other animal assisted therapies.

Facilitators often support this interspecies communication by compassionately interpreting horses' responses to participants and suggesting ways participants can alter their behavior in order to elicit a more positive response from the horse [26, 53]. Participants are then able to experiment with a new way of being and acting, which frequently leads to improved responses from the horse as they respond in the moment [26, 51]. Participants then have clear examples and embodied experiences of choosing to behave differently across different situations - for example, deciding to take a deep breath and try again when something is difficult, then succeeding.

These small successes, repeated across the duration of a program, with each acknowledged and celebrated by facilitators, help participants to build confidence and self-esteem [54], as well as to understand their own problem-solving processes with the support of facilitators. Participants are also able to practice nuances in embodied communication, such as the difference between being assertive and aggressive – receiving feedback without judgment. This kind of differentiation is an important skill to develop for effective communication and conflict [55] and can be difficult to practice in a way which is both authentic and safe.

The intentional practice of clear non-verbal communication is a key feature of many equine assisted services [26, 53] which enables participants to understand their physiological responses across different states, for example the raised heartbeat of anxiety or the slowing down which is characteristic of depression [56]. Helping participants understand how to navigate different emotional states in an equine assisted setting could be helping them generalize these learnings to other settings, enhancing their emotional regulation skills and giving them a greater degree of behavioral options when faced with stressful circumstances.

However, there is an important balance when working with horses and participants in order to ensure that equine welfare is not compromised. Horses often respond strongly to participants, thereby offering participants insight into their own behavior and current state – however, there is a need to consider the ethical implications of this for both horses and participants [57]. There are many ways in which this can be achieved (such as using a consent-based model and setting clear expectations for participants) – and there is growing recognition that it is a critical step in the development of the EAS industry.

2.3 Experiential learning of emotional skills

Temple Grandin, an animal scientist who has written extensively of her experiences as a person with autism, writes "To have feelings of gentleness, one must experience gentle bodily comfort... It was difficult for me to understand the feeling of kindness until I had been soothed myself" [58]. Many participants referred to EAS have had Adverse Childhood Experiences (ACES), which without being addressed can lead to long-term stress, poorer educational outcomes, and even chronic illness [59]. Grandin's account of experiential learning demonstrates the power that positive experiences of emotional regulation can have, in terms of helping to understand what is required for personal relationships in an embodied way.

Working with horses requires extensive and specific access to sensory information, resulting in a closely embodied experience for participants [60]. For some who have experienced trauma or Adverse Childhood Experiences (ACES), conscious embodiment may be missing from their daily lives, with dissociative tendencies because of trauma found to be reflected in neural changes [61]. However, this can be a double-bind; although re-accessing bodily awareness is a potential path to healing [62], it can be a difficult process, rife with triggers [63] – making it unappealing and even unsafe for young people who may still be living in difficult environments.

Controlled access to emotions and experiences is therefore an important skillset. Working with horses requires participants to access and manage emotions – rather than suppress or become overwhelmed by them. Grooming is a task commonly used within EAS, which is likely to produce oxytocin, similarly, to stroking a pet [64]. Oxytocin can help participants to share emotions around stressful life events [65], or to simply co-regulate with the horse, leading to a more relaxed state [57]. As described by Grandin, without prior experience within an emotional state, it is difficult to understand what it might be or how to reach it – however, once participants have learned to be calm and connected, they may be able to access it at other times outside of the intervention.

This is described by participants at EAS interventions, with some using alliterative terms formed through their activities with horses to describe how they reach desired states of embodiment outside of the program – for example, using their Polly Power Walk to feel confident, or Benji Breaths to calm down. Other older participants

describe a different intervention as "what gets them through the week", as they visualize reaching their safe space during times of stress. The power of providing participants with lived experiences of positive, relaxed states is likely to be underestimated; for people who have always held a sense of safety or security, the precarious sensation of living without it is unimaginable, as is the sense of relief upon finding it.

This sense of relief may account for the frequent descriptions of tearful exchanges described within both EAS [66] and horse training styles which take account of both horse and human emotions [67]. Barbara K. Rector writes that following the centering and attunement exercise which takes place at the beginning of the AIA (Adventures in Awareness) program, many report "significant emotions rising to the surface" [66]. These are permitted and encouraged to be shared without judgment, then released. "Letting go" of attachment to experiences outside of the present is a powerful tool for wellbeing encouraged by Buddhist practices [68], with emotional breakthrough often acting as a catalyst for positive psychological change [69]. The sense of safety created by facilitators and horses within EAS [25] can help to provide space to manage, respond to and release negative emotions. This is likely to both improve adolescent mental health in the moment, as well as teaching skills for management of mental health outside of the program.

Rashid offers an account of how the honest reflection offered by horses can motivate people towards emotional honesty and "taking a hard look" at their lives [67] – as well as indicate areas where they may be hiding or holding onto unhelpful emotions. The lack of judgment and immediate biofeedback can help bring awareness to participants without triggering defensiveness and help them to make positive changes in a relatively short period of time. This experiential learning of emotional skills through interactions with the horses and facilitators represents both a key feature of many programs, and a core outcome.

2.4 Outcomes of equine assisted services

EAS has been found to have many outcomes across a variety of studies and participant groups, with a recent survey of equine assisted practitioners in the southwest of England finding over 88 common outcomes across programs. Many of these can be broadly categorized in alignment with the factors of the Strengths and Difficulties questionnaire [70] and will be examined in these categories during this chapter for the purpose of clarity.

2.4.1 Emotional symptoms

The first and potentially most important outcome is emotional symptoms, which are likely to moderate several other areas of behavior such as conduct problems and peer relationship problems. Research has [71] found a strong link between affect and personality; that is, the way we feel is strongly linked to who we are. It follows that helping participants learn to feel better is likely also to help them behave better, whether that's a young child learning to be calm in a classroom, or a teenager managing their frustration in a family setting. Whilst other therapies seek to help participants understand their emotions, and common interventions such as CBT help people to manage their thoughts [72], EAS provides a non-judgmental environment to develop emotional skills in practice.

A key emotional skill is the ability to calm down in times of stress; to return to baseline. The soothing impact of EAS has been described above, with several studies

finding that improved emotional regulation and calmness are achieved by equine assisted services [73, 74]. Consistent with this, many programs find that reduced anxiety is a common outcome of EAS as participants learn to use adaptive strategies to calm themselves down [75]. There is some anecdotal evidence suggesting that this ability generalizes across contexts, with participants reporting thinking about their experiences at the services in times of stress, which helps them use strategies they have learned to calm down.

2.4.2 Conduct problems

Although conduct problems often stem from emotional dysregulation, a large proportion of participants are referred to equine assisted services for conduct problems, with emotional concerns either secondary or unrecognized. Therefore, alleviating or resolving conduct problems represents an important outcome measure, particularly as conduct problems are often the basis for funding EAS programs. Conduct problems can include fighting with other young people or family members, lying, stealing, refusing to attend school, and suffering from tantrums or other maladaptive behaviors.

A study with young offenders by Hemingway et al. found that a majority of participants improved in behavioral areas such as the ability to focus, communicate, and plan realistically [73]. It was suggested that the opportunity to rehearse calmness during communication with others, whether horse or human, helped them to make these behavioral changes which referrers reported as generalizing to other settings.

2.4.3 Hyperactivity/inattention

The access to calmness described above is also likely to help helps participants who may struggle to self-regulate and focus. A series of case studies [76] with institutionalized children found that an EAL program with a psychomotor intervention had a positive impact on participants ability to self-regulate, as well as improved appropriateness and intentionality of actions. This study involved a very small number of participants – though a meta-analysis of the effect of EAS for participants with autism also found significant reductions in hyperactivity [77]. Taken together, these findings imply that access to repeated experiences of embodied calmness via EAS is likely to reduce problematic hyperactivity for participants.

2.4.4 Peer relationships

EAS programs are often provided in a group setting, with some programs actively supporting participants to socialize and get to know each other. There is some preliminary evidence that social modeling by facilitators helps participants to develop the necessary confidence and skillsets to interact with peers. A study of an EAS program found improved social competence within the participant group following an 11-week equine facilitated learning program [78], which included social topics such as trust, mutual respect, and boundaries. These topics are frequently included in programs which work with horses, as they are qualities necessary to understand in order to safely spend time with large, flighty prey animals.

By creating a situation in which these core social skills become highly relevant for personal safety, EAS can simulate common potential relationship strains such as setting appropriate boundaries without becoming aggressive or afraid. This is

similar to the idea put forward by Safran et al. that learning to repair ruptures within a therapeutic alliance is a key process for personal change within psychotherapy [79]. Learning to negotiate boundaries through common handling procedures with horses can help create scenarios for participants to experience a range of emotions (such as frustration, fear, or compassion) which can then be explored and understood with their implications for peer-to-peer relationships, or simply experienced and moved through – depending on the approach of the particular program.

In this way, participants may gain emotional stability by becoming comfortable with emotional experiences, understanding that they do not always need to act immediately based on emotion, but can instead choose their response. This ability to moderate their emotional reactivity is like that often achieved by mindfulness practices [80] and can lead to greater social competence. A series of studies [81] found that emotional intelligence improves social outcomes across a range of factors, from empathic perspective taking to having cooperative responses. As social competence is associated with the ability to behave well in relation to other people [82], programs which improve social competence are highly likely to improve peer-to-peer relationships.

2.4.5 Prosocial behavior

Much of the literature is focused on alleviating negative behavioral symptoms, such as reducing hyperactivity or conduct difficulties. However, the majority of EAS programs take a strengths-based approach, offering participants an environment to succeed at the level they can achieve at. EAS activities tend to be oriented around the care of horses, for example mucking them out, feeding and grooming them, and exercising them. This practice of other-directed care with the horse as intrinsic motivation could be helping participants learn to care for another through direct experience, resulting in increased likelihood of prosocial behavior outside the program. It has been found that pet arrival may trigger prosocial behaviors such as sharing with others and comforting others for people with autism [83], possibly due to the increased opportunities to learn such behaviors in a non-stressful environment.

It is possible that visiting the horses could have a similar impact for several participant groups. A study by Pelyva et al. found significantly improved prosocial behavior of adolescents involved with an equine assisted activity compared with a group who were not involved with horses [84]. Hauge et al. also investigated social dynamics for adolescents who took part in an equine assisted intervention (EAI), finding that perceived social support increased for participants who took part in the EAI [85]. Qualitative studies have described the importance of perceived connection with the horses [86], and participants are generally encouraged to see the horses as social agents, therefore it is likely that some of this perceived support is received via interactions with the horse. This could lead to a sense of reciprocity being experienced in the relationship, which is likely to support and motivate developing reciprocal relationships outside of EAS for participants.

2.5 Limitations

Although this chapter has used multiple research studies and reflections from the authors work and others, it is still worthwhile to consider what the limitations are in the field of research focused on equine assisted services overall. When considering the evidence base in this area from the perspective of the hierarchy of evidence [87], most published research sits within the mid-range of quality between expert opinion

and randomized controlled trials and systematic reviews. In addition, studies often have small numbers and poorly describe exactly what the equine assisted service being evaluated consisted of. It is also important to note that the hierarchy of evidence itself has limitations for the equine sector as interventions may receive referrals for a very wide range of problems such as:

Anxiety
Depression
ADHD
Suicidal
Eating disorders
Anger management
Violence
Bullying
Being bullied
PTSD
Autism
OCD
Drug dependency
Alcohol dependency
Emotional dysregulation
Victim of crime
Victim of abuse
Witnessing abuse
Domestic violence

Standard practice for RCTs is to focus on one specific cohort and recruit and randomize participants to the intervention under study and `treatment as usual` and compare outcomes. An individual charity offering equine assisted services may see hundreds of individuals over a year with a whole range of issues, so recruiting enough participants with one specific issue to provide a large enough cohort for an RCT is challenging. In addition, often the equine assisted service is being used with individuals for whom other interventions such as talk based services are not working, so finding a comparable `treatment as usual` group is also a challenge [73].

2.6 Discussion

Emerging literature on EAS acknowledges that the nature of the horse as a prey animal and the skills required to successfully interact and learn with such an animal may be the key distinctive quality which helps humans to control their behavior. It may be that learning about prey animal behavior and that we as predators need to modify our behavior to enable calmness in the horse helps enable and motivate the human involved to practice being calm during the intervention. This motivation and the resulting positive calm response from the horse may help the human recognize what it is to be calm and learn the benefits [88]. Further research is required however, to see whether, for instance, dogs (as another predator) or other animals can achieve similar results in the humans they interact with.

Learning to be calm is becoming a common focus for interventions such as meditation, mindfulness and contact with nature. Enabling and experiencing calmness and teaching it as a skill seems to be a theme across EAS interventions. However, it is important to note that many of the individuals who are referred or who choose to attend EAS sessions are those for whom other interventions such as talk, or group or

education-based interventions are not working or are not engaging them to complete the program. The unconditional positive regard and positive role modeling which occurs on EAS programs as a consistent quality may also be an important element or context for the experience with horses. Importantly the horse is not looked down on during the EAS programs for being afraid at times; it is seen as part of their nature and indeed of our nature as humans, and a useful response to some parts of life which are indeed dangerous for us and horses.

Is the presence of the horse the factor which motivates us, is it the opportunity to engage with another beautiful charismatic species or the understanding that this animal is prey and behaves as such? These prey animal characteristics (hypervigilance, vulnerability, claustrophobia, the strong need to be part of a group, and the desire to run from danger) in the research we have carried out to date seem to strike a chord with those who themselves feel vulnerable and preyed upon in our human groups, communities, and society.

Experiencing and achieving calmness in our bodies and our minds to be safely and calmly with a horse may be the main motivator and outcomes from these EAS programs. So little of our world now is experienced through our bodies primarily, and few experiences engage us so completely in the moment, enabling us to not focus on the future or the past but be completely in the present. Very few learning opportunities enable us to feel 'powerful', 'happy' and experience feelings of 'love' (in the words of some of our participants). Our pilot work suggests that asking a powerful mammal to do something with us is an emotional experience for the human. Learning to be emotionally aroused and achieve a positive calm outcome from that may truly be a way to interrupt previous destructive patterns of behavior in other parts of our lives [73, 74]. Through EAS interventions this may be achievable without recourse to medication or the need for prolonged examination of negative aspects of our lives.

2.7 Conclusions

In this chapter we have examined many aspects of EAS which could be leading to positive changes in adolescent mental health and well-being. **Table 1** shows which of Fusar-Poli et al's [2] core domains of wellbeing have been discussed in this chapter [2]:

This chapter has focused on emotional regulation in relationship with others, which includes both facilitators and horses working together with participants across a range of activities but always returning to calmness. Without this ability to return to calmness, participants are likely to be subject to chronic stress which can lead to behavioral, physical, social and mental health symptoms. It is as-yet unclear to what extent equine assisted interventions are differentiated from other animal assisted interventions or alternative well-being programs, but the existing literature is beginning to indicate that equine assisted interventions are an option for treatment and prevention of poor adolescent well-being by facilitating improvements to the domains above.

From our analysis, equine assisted interventions are bridging the connection gap which many adolescents have been suffering further to the COVID-19 pandemic, by finding a space to be accepted for being themselves. It is hoped that this will help them learn to provide such a space for others, thereby improving their relationships and the mental health of those around them. They are also finding opportunities to achieve personal success, whether that is mustering the courage to touch a horse for the first time, learning to communicate nonverbally, or developing the ability to set boundaries kindly and calmly. Critically, they are also finding a place where they feel safe and can practice emotional skills - building tolerance for quiet moments and

Wellbeing domain	EAS impact	Relevant literature
Mental health literacy	Compassion for the horse, understanding of fear & anxiety in themselves and others	Inwood & Ferrari [27]*
Attitude towards mental disorders	Not specifically covered	
Self-perceptions and values	Confidence building, developing prosocial behaviors	Fagan et al. [54]*
Cognitive skills	Not specifically covered	
Academic/occupational performance	Often improves attendance at school, or leads to vocational training & employment	Hemingway [73]
Emotions	Improves emotional regulation	Hemingway et al. [50]
Behaviors	Reduces conduct problems, increases prosocial behavior	Hemingway et al. [74]; Pelyva et al. [84]
Self-management strategies	Improves emotional regulation	Hemingway et al. [50]
Social skills	Increases prosocial behavior	Pelyva et al. [84]
Family and significant relationships	Improves emotional regulation and prosocial behavior	Grandgeorge et al. [83]*; Pelyva et al. [84]
Physical health	Often includes aerobic activity	Marques et al. [43]*
Sexual health	Practicing setting boundaries, improving social competence	Pendry and Roeter [78]
Meaning of life	Connection with the horses helps participants to feel that they are of value	Waite & Bourke [45]
Quality of life	Enhanced life chances via the skills above	

**Studies from broader psychological literature – not EAS-specific.*

Table 1.
Core domains of wellbeing [2] which may be impacted by EAS.

exploring their own emotions, or physically projecting their energy to prevent a pony from crowding them during an activity.

By experiencing themselves mirrored back via the responses of horses, whilst being compassionately coached by facilitators to make positive changes, young people are also able to learn how to develop themselves with kindness, accepting where they are and moving forwards. Participants can experience mastery of skills for perhaps the first time, whilst having early attempts honored and celebrated by facilitators and those around them. Within the broad range of new experiences offered by EAS is the opportunity for participants to experience and express a wide range of emotions, learning to manage them without shame or judgment. These experiences can form a foundation for maintaining mental health in other contexts, as well as for supporting others in their lives.

The changes made within EAS are supported by the skilled compassion of facilitators placed within the accuracy of the horse's responses, as participant's emotional and behavioral tendencies are amplified and resolved. Horseman Nahshon Cook describes the relationship between the horsemanship teacher and the student as like that of the student and the horse; imbued with the responsibility of creating safety [89]. This dynamic reveals how EAS are truly participant-centric, offering participants the

opportunity to be both supported and supportive through changing their behavior to enable them to communicate and be with horses. In this way, the core domains of mental health and wellbeing are developed through a foundation of calmness first – creating potential for further growth.

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