

The use of equine-assisted therapy as a form of treatment in patients with autism spectrum disorder

O uso da equoterapia como forma de tratamento em pacientes com transtorno do espectro autista

El uso de la equinoterapia como forma de tratamiento en pacientes con trastorno del espectro autista

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Abstract

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition that affects communication, social interaction, and behavior, requiring complementary therapeutic approaches that support biopsychosocial development. In this context, the present study aimed to analyze the effects of hippotherapy in children with ASD based on the perception of parents and caregivers. This is a descriptive study with a qualitative-quantitative approach, carried out through a literature review and the application of a structured questionnaire to parents and caregivers of children participating in hippotherapy programs, totaling 17 respondents. The results indicated a predominance of moderate ASD (47.1%), followed by mild (41.2%) and severe cases (11.8%). Regarding perceived effects, 52.9% of participants reported significant improvements in behavioral and motor domains, 23.5% perceived mild improvements in multiple areas, and 17.6% highlighted advances mainly in social and emotional aspects. Positive impacts were also reported in adaptation to school routine and family communication. It is concluded that hippotherapy is a promising complementary therapeutic strategy for children with ASD, although studies with greater methodological rigor are needed to strengthen the available evidence.

Keywords: Equine therapy; Autism Spectrum Disorder; Animal-assisted therapy.

Resumo

O Transtorno do Espectro Autista (TEA) é uma condição do neurodesenvolvimento que compromete a comunicação, a interação social e o comportamento, demandando abordagens terapêuticas complementares que favoreçam o desenvolvimento biopsicossocial. Neste contexto, o presente estudo teve como objetivo analisar os efeitos da equoterapia em crianças com TEA, a partir da percepção de pais e cuidadores. Trata-se de um estudo descritivo, de abordagem quali-quantitativa, realizado por meio de revisão bibliográfica e aplicação de questionário estruturado a pais e cuidadores de crianças participantes de programas de equoterapia, totalizando 17 respondentes. Os resultados indicaram predominância de TEA moderado (47,1%), seguido de casos leves (41,2%) e graves (11,8%). Quanto aos efeitos percebidos, 52,9% dos participantes relataram melhorias significativas nos domínios comportamental e motor, 23,5% perceberam melhoras leves em múltiplas áreas e 17,6% destacaram avanços principalmente nos aspectos sociais e emocionais. Também foram relatados impactos positivos na adaptação à rotina escolar e na comunicação familiar. Conclui-se que a equoterapia constitui uma estratégia terapêutica complementar promissora para crianças com TEA, embora estudos com maior rigor metodológico sejam necessários para fortalecer as evidências disponíveis.

Palavras-chave: Equoterapia; Transtorno do Espectro Autista; Terapia assistida por animais.

Resumen

El Trastorno del Espectro Autista (TEA) es una condición del neurodesarrollo que afecta la comunicación, la interacción social y el comportamiento, y que requiere enfoques terapéuticos complementarios que favorezcan el desarrollo biopsicosocial. En este contexto, el presente estudio tuvo como objetivo analizar los efectos de la equinoterapia en niños con TEA a partir de la percepción de padres y cuidadores. Se trata de un estudio descriptivo, con enfoque cualitativo-cuantitativo, realizado mediante revisión bibliográfica y la aplicación de un cuestionario estructurado a padres y cuidadores de niños participantes en programas de equinoterapia, con un total de 17 encuestados. Los resultados indicaron un predominio de TEA moderado (47,1%), seguido de casos leves (41,2%) y graves (11,8%). En cuanto a los efectos percibidos, el 52,9% de los participantes informó mejoras significativas en los dominios conductual y motor, el 23,5% percibió mejoras leves en múltiples áreas y el 17,6% destacó avances principalmente en los aspectos sociales y emocionales. También se informaron impactos positivos en la adaptación a la rutina escolar y en la comunicación familiar. Se concluye que la equinoterapia constituye una estrategia terapéutica complementaria prometedora para niños con TEA, aunque se necesitan estudios con mayor rigor metodológico para fortalecer la evidencia disponible.

Palabras clave: Equinoterapia; Trastorno del Espectro Autista; Terapia asistida por animales.

1. Introduction

Nowadays, there has been a significant increase worldwide in the number of cases and diagnoses of Autism Spectrum Disorder (ASD), which has led to a growing search for more effective diagnostic and treatment approaches (Ministério da Saúde, 2020). ASD is generally diagnosed in childhood, during the first years of life, making it essential for parents and caregivers to pay close attention to the characteristic signs and behaviors, thereby facilitating earlier diagnosis and initiation of treatment. Although considerable effort has been devoted to elucidating the causes of ASD, there is still no cure, and different treatment approaches have been proposed with the aim of improving the quality of life of these individuals.

The diagnosis of ASD is essentially clinical, as there is still no biomarker capable of detecting it in a safe and widely available manner. The diagnostic process involves the so-called Wing's Triad, which includes difficulties in communication, difficulties in social interaction, and restricted and repetitive patterns of behavior (SBP, 2024). ASD can be classified into three different levels according to the degree of restricted/repetitive behaviors and the need for support, with level 1 indicating the lowest need for support and level 3 representing the greatest severity and highest level of support (Mello, 2022). In Brazil, the Childhood Autism Rating Scale (CARS) is widely used to complement the diagnosis of ASD. This scale consists of 15 items and can be completed with parents during the clinical consultation (Pereira, 2008).

ASD is a condition that has a major impact on the individual's life, making it essential to implement therapies aimed at addressing daily difficulties, especially those faced by children. In this context, hippotherapy has emerged as one of the most prominent therapeutic approaches in recent years, as it incorporates the horse as a co-therapist in the treatment of this disorder. Hippotherapy has shown promise as a therapeutic tool, promoting the development of cognitive and motor skills and improving the characteristic signs of the condition. It is distinguished as both an educational and therapeutic method, using the horse within an interdisciplinary health-related approach to promote the biopsychosocial development of individuals with disabilities or specific needs (Godoi et al., 2024). This modality is centered on the patient's needs and is characterized by a high degree of individualization and specificity (Bezerra, 2011). Hippotherapy has demonstrated positive effects mainly by providing sensorimotor stimuli, since the horse's movement promotes postural adjustments and the development of essential motor reflexes (Pierobon et al., 2008). Studies have reported several therapeutic benefits associated with hippotherapy, including improvements in balance and posture, the development of fine and gross motor coordination, increased body awareness, enhanced self-esteem and self-confidence, as well as improvements in social and communication skills (Laudeslau, 2010).

Interaction with the horse during hippotherapy creates a playful, motivating, and safe environment, which contributes to the engagement of children with ASD and to the establishment of trust bonds that are essential to the therapeutic process. To ensure this, it is important that the horses selected meet appropriate criteria, such as being over 10 years of age, having a

maximum height of 1.50 m, displaying a calm temperament, smooth movements, and proper training, thereby ensuring safety and greater effectiveness of the interventions (Bezerra, 2011; Ande-Brasil, 2004).

Hippotherapy stands out as an innovative therapeutic practice that has been expanding in Brazil and has demonstrated several benefits for individuals with ASD. However, scientific production dedicated to evaluating its effects and the perceived improvements reported by parents and caregivers remains limited. In this context, the present study aims to analyze, from the perspective of family members and caregivers of children with ASD, the effects of hippotherapy practice.

2. Methodology

This was a descriptive, cross-sectional study with a mixed-methods approach, combining quantitative and qualitative data obtained from 17 parents and caregivers of children with Autism Spectrum Disorder (ASD) participating in hippotherapy programs (Pereira et al., 2018; Risemberg et al., 2026). A non-systematic narrative literature review was also conducted to support the theoretical framework of the study (Fernandes, Vieira, and Castelhana, 2023). For data analysis, simple descriptive statistics were used, including column graphs and relative frequency percentages, according to the following categories: ASD severity, observed behavioral changes, perceived therapeutic benefits, and impacts of therapy on school and family life (Shitsuka et al., 2014).

To conduct the bibliographic research, articles available on scientific databases were used, such as PEPISIC (pepsic.bvsalud.org), SciELO (<http://www.bvs-psi.org.br/php/index.php>). (scielo.br), LILACS (lilacs.bvsalud.org), and BVS-PSI.

In view of the proposed objectives, an electronic questionnaire was administered via Google Forms and directed to parents and guardians of children with Autism Spectrum Disorder (ASD) who participate in hippotherapy sessions. The questionnaire was developed by the researchers based on the objectives of the study, aiming to assess the impacts of hippotherapy on the motor, cognitive, social, and emotional dimensions of the children receiving care.

The sample included 17 participants, selected through non-probabilistic convenience sampling, based on dissemination in hippotherapy centers. All participants were duly informed about the objectives of the research and agreed to participate by signing the Free and Informed Consent Form (FICF), which was made available electronically prior to the beginning of the questionnaire.

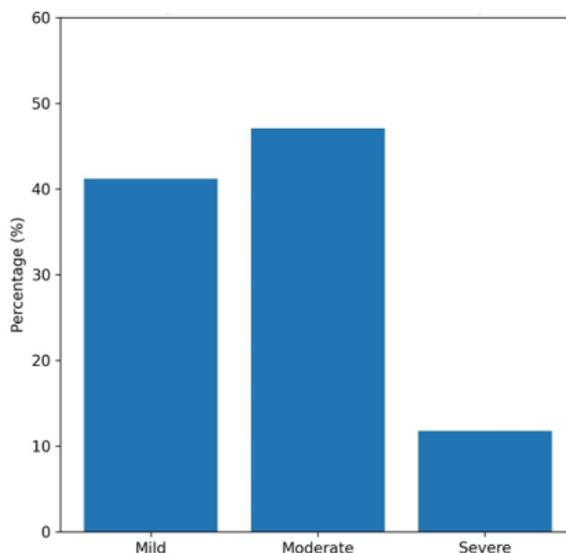
The research project was submitted to the Human Research Ethics Committee and received approval according to the opinion registered under CAAE No. 85313724.7.0000.0191. The FICF included a guarantee of confidentiality of the information, as well as clarification that there would be no direct benefits to participants. Possible emotional risks were also highlighted, particularly in cases where sensitive memories or experiences related to the diagnosis or treatment of ASD might arise.

In addition to the collection of primary data, a bibliographic review was conducted in academic databases such as SciELO, PubMed, and the Virtual Health Library, with the aim of providing a theoretical foundation for the therapeutic effects of hippotherapy. The data obtained were analyzed descriptively, with thematic categorization, and discussed in light of the specialized literature.

3. Results

The descriptive analysis of the collected data revealed a predominance of moderate ASD severity (47.1%), followed by mild (41.2%) and severe cases (11.8%). This distribution allows for the interpretation of results across different functional support levels and may influence parental perception of therapeutic outcomes (Figure 1).

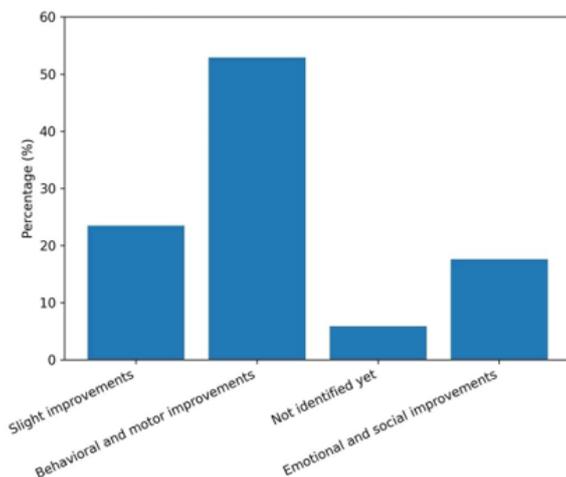
Figure 1 – Distribution of ASD Severity.



Source: Research data (2024).

Regarding behavioral changes, 52.9% of parents reported significant improvements in behavioral and motor domains, 23.5% perceived mild improvements across multiple areas, and 17.6% identified improvements primarily in social and emotional aspects. Only 5.9% of respondents did not observe significant changes (Figure 2).

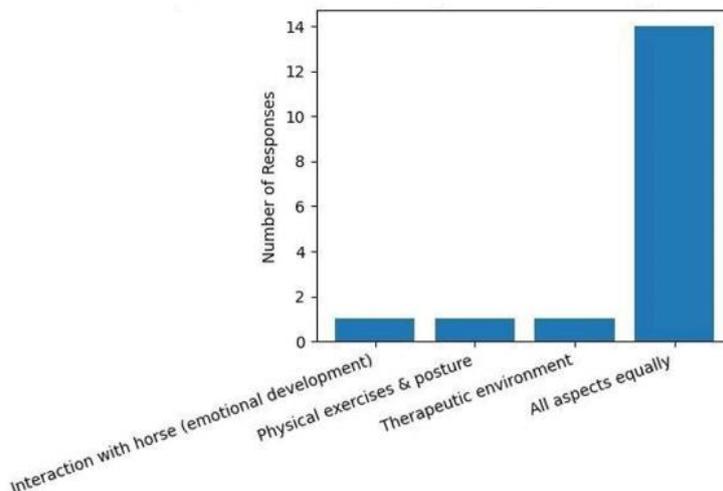
Figure 2 – Perceived behavioral improvements.



Source: Research data (2024).

Study participants indicated several benefits provided by hippotherapy. Among the most prominent were that all aspects (interaction, exercises, and environment) have contributed equally (82.4%); that interaction with the horse has been essential for emotional development (5.9%); that physical exercises and the child's posture improved considerably (5.9%); and that the therapeutic environment is the most beneficial, as it promotes calmness and focus (5.9%). These aspects demonstrate that hippotherapy not only supports clinical treatment but also promotes significant emotional and social gains (Figure 3).

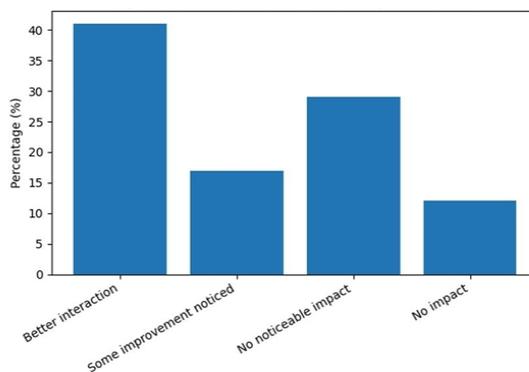
Figure 3 – Most beneficial aspects of equine therapy for child development.



Source: Research data (2024).

Hippotherapy also demonstrated a positive impact on other areas of the children's lives, such as school performance and family interactions. Many parents reported that their children showed greater adaptation to the school routine (41.2%) and improvements in communication with family members (17.6%). These results suggest that the benefits of hippotherapy extend beyond the therapeutic sessions, positively influencing the children's daily lives (Figure 4).

Figure 4 – Impact on school and family interactions.



Source: Research data (2024).

The data from this investigation suggest that hippotherapy can be an effective practice in the therapeutic context, especially for individuals with Autism Spectrum Disorder (ASD), as it strengthens psychomotor and emotional aspects. These findings reinforce the need for further studies and public policies that encourage this practice as part of a multidisciplinary treatment approach for this population.

4. Discussion

The findings of this study indicate that, from the perspective of parents and caregivers, hippotherapy was associated with relevant benefits for children with ASD, particularly in the behavioral, motor, social, and emotional domains. In the analyzed sample, there was a predominance of participants with moderate ASD (47.1%), followed by mild (41.2%) and severe cases

(11.8%). This profile, however, does not fully reflect the distribution described in population-based surveys, in which mild cases tend to predominate over moderate ones. In a U.S. national sample, Zablotsky et al. (2016) found a higher frequency of mild cases than moderate cases, along with a lower proportion of severe cases, suggesting a pattern different from that observed in the present study. One plausible explanation for this difference is that the composition of the present sample may have been influenced by the recruitment context, since participants were selected from hippotherapy centers. It is possible that families of children with greater functional impairment or higher support needs are more likely to seek complementary interventions in an attempt to enhance therapeutic outcomes. This interpretation is partially supported by the literature, as higher levels of parent-reported severity have been associated with greater use of therapies and specialized services.

The predominance of improvements in the behavioral and motor domains is consistent with the literature describing hippotherapy as an intervention capable of promoting postural adjustments, motor coordination, balance, and body organization through the sensorimotor stimuli generated by the horse's three-dimensional movement (Ferreira et al., 2022; Cruz & Pottker, 2017; Pierobon et al., 2008). In this regard, the data from the present study suggest that such mechanisms may also have an impact on behavior, possibly by enhancing bodily regulation, task engagement, and adaptation to the therapeutic environment. Although the study design does not allow causal inferences, the high frequency of positive reports in these domains highlights the relevance of hippotherapy as a complementary resource in the functional management of children with ASD.

The social and emotional benefits observed in this study also deserve attention. Although only 17.6% of participants identified these aspects as the main perceived improvement, 82.4% reported that the benefits of hippotherapy stemmed from the therapeutic experience as a whole—including interaction with the horse, therapeutic exercises, and the environment—rather than from any single isolated element. This finding is particularly important, as it suggests that the effectiveness of hippotherapy may lie precisely in its interdisciplinary and multimodal nature. This interpretation is consistent with authors who emphasize that playful, safe, and predictable interaction with the horse fosters bonding, motivation, engagement, and the development of social and emotional skills (Bezerra, 2011; Martins et al., 2022; Ramos et al., 2023). Thus, beyond being merely a motor stimulus, hippotherapy appears to constitute a therapeutic context in which emotional, behavioral, and social aspects are addressed simultaneously.

Another relevant finding was the impact of hippotherapy in extra-therapeutic contexts. Some parents reported improvements in adaptation to the school routine (41.2%) and in communication with family members (17.6%), indicating that the perceived effects were not limited to the therapy sessions themselves. This finding broadens the understanding of the therapeutic potential of hippotherapy, as it suggests an impact on the child's daily life and social functioning. The literature reviewed in this study had already pointed to gains in self-esteem, self-confidence, socialization, and communication (Laudeslau, 2010; Mello et al., 2022; Xiao et al., 2023), and the present results reinforce this perspective by showing that family members perceived concrete extensions of these improvements at home and at school. In children with ASD, this type of transfer to natural environments is especially relevant, as it represents a greater possibility of social participation and adaptation to everyday demands.

Furthermore, the fact that most caregivers attributed the benefits to the combination of interaction with the horse, therapeutic exercises, and the therapeutic environment reinforces the idea that hippotherapy should not be understood merely as a motor or recreational practice, but rather as a complex intervention. The horse acts as a therapeutic mediator, while the practice setting promotes safety, predictability, and engagement—elements that may be particularly beneficial for children with ASD. In this way, the findings of the present study are consistent with the literature in supporting the view that hippotherapy provides a multidimensional experience capable of simultaneously stimulating sensory, motor, cognitive, and affective pathways (Dums et al., 2023; Mello et al., 2022).

Despite these promising findings, the results should be interpreted with caution. The study was based on a small convenience sample (n = 17) and relied on parents' and caregivers' perceptions as the main source of information, without a control group or standardized objective outcome measures. This set of methodological characteristics limits the generalizability of the findings and may introduce bias, particularly because families already engaged in hippotherapy programs may have greater expectations of benefit or greater involvement in complementary interventions. Even so, despite these limitations, the study contributes by providing descriptive evidence that hippotherapy is perceived as a complementary therapeutic strategy with a positive impact on different dimensions of the development of children with ASD.

In light of these considerations, future research should invest in more robust methodological designs, including larger samples, comparative groups, longitudinal follow-up, and standardized assessment instruments. This would not only help confirm the effects observed in the present study, but also allow a more precise identification of which domains are most responsive to hippotherapy, in which severity profiles the effects are more evident, and to what extent these gains are maintained over time.

5. Conclusion

This study suggests that hippotherapy may be a promising complementary intervention for children with Autism Spectrum Disorder, with perceived benefits in behavioral, motor, social, and emotional domains. Parents and caregivers also reported positive effects on daily life, particularly in school adaptation and family communication. Although these findings are encouraging, they should be interpreted with caution due to the small sample size and the exploratory nature of the study. Further research with larger samples and controlled designs is needed to strengthen the evidence on the effects of hippotherapy in children with ASD.

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