

ENVIRONMENTAL EDUCATION AS A STRATEGY FOR THE PROMOTION AND PROTECTION OF CHILDREN'S MENTAL HEALTH<https://doi.org/10.56238/sevened2025.021-005>**Leidyane Alves da Silva¹, Alyne Anne Silva Barreto², Débora de Jesus Pires³****ABSTRACT**

Children's mental health is essential for children's integral development, but factors such as stress, excessive use of technology, and lack of contact with nature can compromise this balance. This research aimed to review the literature on the relationship between Environmental Education and child mental health, analyzing the benefits of this approach for children's emotional and cognitive development. The literature review considered the search for scientific articles in the Web of Science, Lilacs, and Scielo databases, in the period from 2020 to March 1, 2025. The descriptors used were Environmental Education, Environmental Literacy, Mental Health, Psychological Well-being, Emotional Development, Child, Child Development, and Outdoor Education, combined by the Boolean operator AND. A total of 19 scientific articles were identified, but after applying the inclusion and exclusion criteria, only eight were selected. The studies analyzed indicate that exposure to natural spaces reduces stress and anxiety, in addition to improving children's creativity, concentration, and school performance. The results indicate that active methodologies aimed at outdoor learning can contribute significantly to the strengthening of children's mental health. However, challenges in the school environment, such as the lack of adequate infrastructure and the need for specific teacher training, still limit its implementation. In addition, the absence of projects promoted by the Department of the Environment and the excessive use of screens by both family members and children reduce contact with nature. Given this scenario, it is essential to adopt policies that encourage the creation of green spaces in schools, the continuous training of teachers, and social projects that promote children's contact with nature. Thus, it is concluded that Environmental Education plays a fundamental role in the promotion and protection of children's mental health, contributing to a more balanced and healthy childhood.

Keywords: Outdoor learning; Psychological Well-Being; Development; socio-emotional; Environmental education; Children's mental health.

¹ Student of the Postgraduate Course in Environment, Society and Technology, State University of Goiás/Quirinópolis Campus.

Email: professoraleidyane38@gmail.com,

² Student of the Postgraduate Course in Environment, Society and Technology, State University of Goiás/Quirinópolis Campus.

E-mail: alyneannepesquisadora2025@hotmail.com

³ Professor of the Postgraduate Course in Environment, Society and Technology, State University of Goiás/Quirinópolis Campus.

E-mail: debora.pires@ueg.br.

INTRODUCTION

Mental health in childhood is directly linked to emotional, psychological, and social well-being, and is fundamental for the child's integral development. However, factors such as stress, anxiety, excessive use of technology and reduced contact with nature compromise this balance, negatively affecting child development. Mental health in childhood involves the development of skills that allow children to deal with their emotions, build healthy relationships, and overcome the challenges inherent to their growth (World health organization, 2018). Studies indicate that excessive screen use can negatively impact emotional well-being, contributing to increased levels of stress and anxiety (Viana et al. 2025).

In this context, Environmental Education emerges as an effective strategy to promote children's mental health, stimulating connection with the environment and socio-emotional development. Studies indicate that children's involvement with the environment can reduce stress, improve concentration, and stimulate socio-emotional skills essential for school and social life. According to Walshe, Bungay, and Paiswell (2023), schools that promote children's engagement with nature have reported improvements in child development, including advances in motor skills and attention restoration. In addition, it was observed that the children had fewer social, emotional and behavioral difficulties, as well as greater involvement and better school performance.

The challenges to children's emotional well-being are varied and are directly related to the family, school, and social environment. The quality of family interactions plays a key role in this process. The emotional support and affection offered by parents or caregivers are essential for the development of the child's emotional security, promoting their mental health and strengthening their trust in themselves and others (Pastoral da criança, 2023).

The experiences lived in the school environment are also decisive for the construction of children's emotional well-being. School is one of the first spaces for socialization that children attend, being essential for the development of self-esteem, the creation of bonds of friendship and learning about how to deal with frustrations. However, the school environment can both offer warmth and support and become a factor that generates stress and anxiety, directly affecting students' mental health (Pensi Institute, 2024).

Among the main challenges related to children's mental health, stress and anxiety stand out, which can be triggered by several factors, including school demands related to the child's age and grade, as well as unstable family relationships or the absence of support figures. The family represents an essential nucleus for the emotional and school

development of children, being the first environment in which they build their relationships and develop their identity. Studies indicate that parental involvement can positively impact students' engagement and school adjustment (Cava et al., 2006 apud; Guimarães Junior et al., 2023; Martínez, 2009 apud Guimarães Junior et al. 2023).

Excessive use of technology and lack of time outdoors are also challenges to child well-being, increasing the risks of physical complications, mental health problems, and difficulties in cognitive, social, and emotional development (Robidoux, 2019 apud Vasconcelos et al. 2023). The increase in screen time, whether on cell phones, tablets or video games, reduces the child's contact with real interactions, harming the development of social and emotional skills. In addition, the guardians themselves are also immersed in this reality, often failing to cultivate the habit of living with their children.

According to the Brazilian Society of Pediatrics (2024, p. 5). The lack of time and scarce interaction between children and adolescents of different ages in safe and well-maintained public spaces, we are witnessing the strong impact, increasingly well documented, of the digital intoxication to which we are all subject. Both children and adolescents and their guardians spend a good part of their time immersed in the digital world, which exerts great manipulative and addictive power, in increasing exposure to advertising toxic, violent or inappropriate content, which produces relevant effects on coexistence and physical and mental health.

Research indicates that interaction with nature favors children's cognitive, behavioral, and emotional development. Contact with natural environments improves concentration, stimulates creativity, and promotes general well-being, in addition to reducing stress and anxiety. Exposure to sunlight also contributes to the production of vitamin D, which is essential for healthy growth (Brazilian Society of Pediatrics, 2024). Research indicates that natural environments stimulate creativity and curiosity, encouraging exploration, imagination, and the discovery of new forms of interaction and learning. (Colégio Anglo São Carlos, 2023).

Outdoor activities are critical for holistic child development, as they promote physical health, stimulate cognition, favor social interaction, and contribute to emotional well-being (Charan et al. 2024). In addition, these experiences reduce stress and anxiety levels, encourage pro-environmental behaviors, and stimulate the development of social skills. In line with national and international legal frameworks, several studies associate the lack of opportunities to play and learn in nature with health problems in childhood and adolescence, including obesity, sedentary lifestyle, hyperactivity, motor difficulties, anxiety, depression, and even myopia (Brazilian Society of Pediatrics, 2024).

Involvement with nature is essential for the integral development of children and adolescents, including those with autism spectrum disorder and other disabilities. In the

case of autism, for example, research shows that the natural environment provides sensory experiences that offer a refuge from the often overly stimulating indoor environment. Among the documented benefits are improved communication, more positive social interactions, increased physical activity, gains in cognitive development, the ability to interact socially, and the use of imagination in play. These positive effects have been observed in children with different types of disabilities, as long as accessibility barriers are adequately addressed (Brazilian Society of Pediatrics, 2024).

Studies indicate that contact with green areas is associated with a more balanced regulation of cortisol, a hormone linked to stress, promoting a positive impact on children's mental health. International research indicates that exposure to natural environments can reduce stress, anxiety, and symptoms of depression, as well as promote an overall sense of emotional well-being. A systematic review and meta-analysis conducted by Roberts et al. (2019) found a positive effect of short-term exposure to the natural environment on reducing depressive mood, evidencing the relationship between contact with nature and emotional well-being. In addition, Helbich et al. (2018) observed that the greater presence of green spaces is associated with lower antidepressant prescription rates, suggesting a beneficial impact of green spaces on mental health.

The literature suggests that Environmental Education can play a relevant role in this process, favoring the connection with nature, socio-emotional development and psychological well-being. However, studies are still needed that explore how this approach can be implemented in the formal and non-formal setting, as well as its impacts on children's mental health in the long term. Thus, this study seeks to analyze Environmental Education as a strategy for the promotion and protection of children's emotional and cognitive well-being.

OBJECTIVE

This study aims to analyze the role of Environmental Education as a strategy for the protection and promotion of children's mental health, investigating its benefits for socio-emotional development and learning.

METHODOLOGY

This research is a review of the literature on aspects related to environmental education as a strategy for the promotion of children's mental health. The databases used were: Web of Science, Lilacs and Scielo. The descriptors used to search for scientific articles were in English and were as follows: ("Environmental Education" OR

"Environmental Literacy") AND ("Mental Health" OR "Psychological Well-being" OR "Emotional Development") AND ("Child" OR "Child Development") AND ("Outdoor Education"). The inclusion criteria defined for the selection of these publications were: publications in Portuguese and English; Articles available in full that address the theme of the review and that are open access, published and indexed in the selected database, from 2020 to March 1, 2025.

RESULTS and DISCUSSION

A total of 19 articles were found, after the analysis of the inclusion and exclusion criteria, only 15 were related to the topic addressed. However, only eight were selected, since the others did not have open access. In addition, all articles were in English, and no studies produced in Brazil according to the keywords used were identified. As seen in Table 1 below.

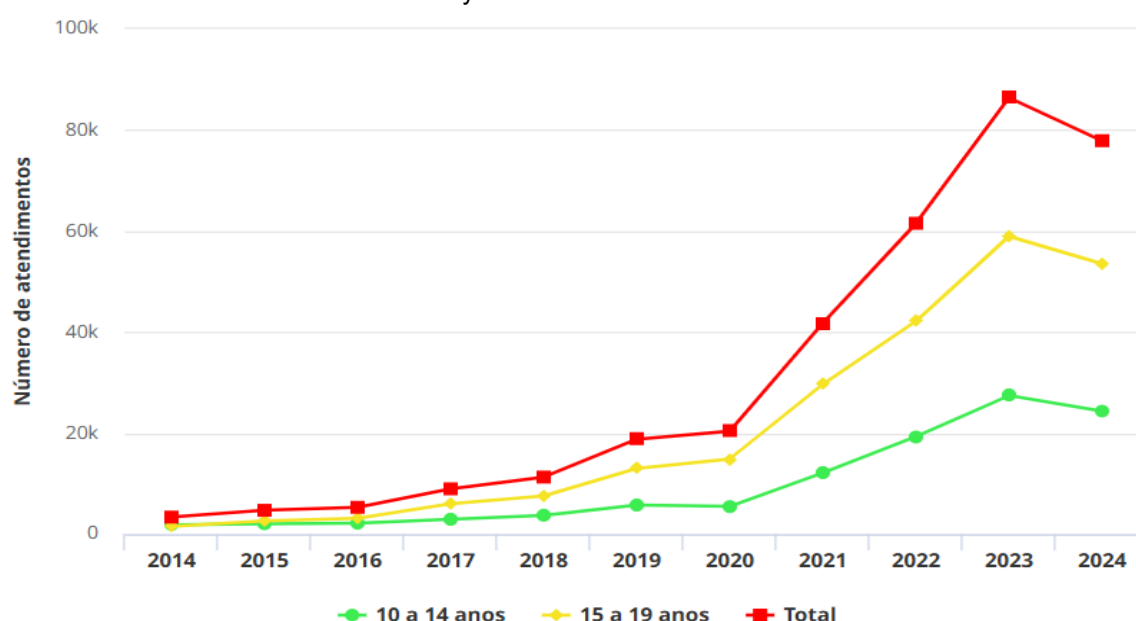
Table 1: Selected publications and their references.

Publication	Author/Date
A Nature-Based Intervention and Mental Health of School children A Cluster Randomized Clinical Trial.	Loose et al. 2024.
Barriers to Children's Outdoor Time: Teachers' and Principals' Experiences in Elementary Schools	Patchen et al. 2024.
Sustainable Outdoor Education: Organisations Connecting Children and Young People with Nature through the Arts.	Walshe et al. 2023.
Protocol for the Open Sky School: a two-arm clustered randomized controlled trial to test the effectiveness of a nature-based intervention on mental health of elementary school children	Loose et al.2023.
The Potential of Green Schoolyards for Healthy Child Development: A Conceptual Framework	Van Den Bogerd et al. 2023.
Making Nature Explicit in Children's Drawings of Wellbeing and Happy Spaces,	Moula et al. 2021.
Nature as an Ecological Asset for Positive Youth Development: Empirical Evidence From Rural Communities.	Bowers et al. 2021.
Benefits of Outdoor Sports in Blue Spaces. The Case of School Nautical Activities in Viana do Castelo	Rocher et al. 2020.

The analysis of the literature revealed that Environmental Education plays a significant role in promoting children's mental health, especially by encouraging children's contact with nature and outdoor activities. The selected articles show that programs and interventions based on the natural environment contribute to psychological well-being, reducing stress and anxiety levels, in addition to promoting socio-emotional development.

According to data from the Ministry of Health, care related to anxiety disorders in the Unified Health System (SUS) has increased significantly in the last decade, registering a growth of 1,575% among children aged 10 to 14 years and 4,423% among adolescents aged 15 to 19 years (Viana et al.2025). These numbers highlight the urgent need for approaches that promote children's emotional well-being, such as Environmental Education, which encourages contact with nature and favors socio-emotional development. Figure 1 illustrates this significant increase in SUS care over the last decade, reinforcing the need for preventive strategies for children's mental health.

Figure 1- Increase in care related to anxiety disorders in the SUS between 2014 and 2024



Source: Ministry of Health (apud Viana et al., 2025). Available at: <https://g1.globo.com/politica/noticia/2025/01/30/ansiedade-de-2014-a-2024-atendimento-a-criancas-de-10-a-14-anos-subiu-quase-2500percent-no-sus.ghtml>. Accessed on: March 02, 2025.

The studies analyzed, such as those by Loose et al. (2024) and Patchen et al. (2024), indicate that children's exposure to natural spaces contributes to balanced emotional development, increasing concentration, reducing symptoms of hyperactivity, and strengthening socio-emotional skills. This corroborates the research of Van Den Bogerd et al. (2023), which highlights the benefits of green schoolyards on child development.

Formal education, combined with Environmental Education, can contribute to the development of children's potential, prioritizing the promotion of children's mental health through outdoor classes in spaces such as squares, courtyards and parks close to the school. If the institution has a wooded environment, this space can also be used. In

addition, it is possible to organize visits to nature reserves, ecological parks and preservation areas, allowing children to learn, in practice, about biodiversity and environmental conservation. Another strategy is to plan and execute recycling and reuse projects, such as the construction of toys and objects from recyclable materials, encouraging conscious consumption and sustainability. Finally, the implementation of sustainable living spaces, such as planned leisure areas, ecological gardens, and shaded environments with strategic afforestation, contributes to the creation of a harmonious environment that is conducive to the well-being of students.

The adoption of active methodologies can improve the teaching of Environmental Education and contribute to children's mental health, making classes more interesting and challenging, as well as less stressful for both the educator and the student. This is especially important in overcrowded classrooms, because instead of the teacher being the center of the whole process, they assign students the role of cooperating in their own learning and developing teamwork skills. The development of socio-emotional skills can be enhanced by active methodologies, as they stimulate student engagement and autonomy in the learning process (Cavalcanti, 2023). Research by Bowers et al. (2021) and Rocher et al. (2020) indicates that outdoor activities can be more effective when aligned with active methodologies, such as Project-Based Learning (PBL) and Experiential Learning. The implementation of these methodologies in the school context can enhance the positive impacts of Environmental Education on children's mental health, promoting more meaningful and engaging learning.

Non-formal education and family also play an important role in promoting children's mental health. The Secretary of the Environment in partnerships with public and private agencies and the community can promote the implementation of integrated and sustainable ecological projects in the long term. Collective initiatives, such as the creation of community gardens, the revitalization of squares with a focus on afforestation and the cultivation of gardens and plants, in addition to the organization of moments of instruction and care for the environment, not only benefit the ecosystem, but also promote the social and emotional well-being of residents. These actions encourage cooperation, strengthening the sense of belonging, and environmental responsibility, contributing to a more balanced, resilient, and sustainable society.

Small daily actions, such as growing a vegetable garden at home or plants, outdoor walks and playing in parks, help to awaken environmental awareness and promote moments of relaxation and connection between parents and children. When the family values and encourages contact with nature, the child develops a healthier

relationship with the environment and with his own mental health. It is important to promote lectures for the instruction of families and incentives promoted by the government.

Projects in partnership with universities promoting outdoor activities such as dance, ecological walks and cleaning of public spaces, water quality monitoring, tree planting, sustainable functional circuit, sports adapted to the environment, Mindfulness practices, yoga and relaxation can contribute significantly to reducing stress and improving children's concentration. Non-formal Environmental Education comprises educational actions and practices that aim to sensitize society about environmental issues and it is essential to stimulate collaboration between schools, universities and non-governmental organizations in the formulation and execution of Environmental Education programs. Partnerships between public and private institutions should also be encouraged to strengthen these initiatives. Another relevant aspect is society's awareness of the importance of conservation units, including the appreciation of traditional populations that maintain links with these areas (Brasil, 1999).

Although the literature demonstrates significant benefits, Patchen et al. (2024) point out challenges in the implementation of educational practices aimed at outdoor learning, such as the lack of adequate infrastructure in schools and the lack of knowledge of teachers on how to apply active methodologies in their classes. These challenges reinforce the importance of public policies that encourage the creation of accessible green spaces and the training of teachers to apply these approaches.

Based on these results, it is suggested the expansion of programs that integrate nature into the formal and informal daily life, the social life of the child, as well as the adoption of educational policies that encourage the continuing education of teachers for the application of Environmental Education as a strategy for child well-being. In addition, the importance of guiding families on the relevance of contact with nature in the emotional and cognitive development of children is highlighted, encouraging practices that reduce the excessive use of screens and stimulate outdoor experiences.

FINAL CONSIDERATIONS

The review showed that Environmental Education plays a fundamental role in promoting children's mental health, contributing to socio-emotional development and the reduction of disorders such as anxiety and stress. The studies analyzed demonstrate that the connection with nature provides cognitive, emotional, and behavioral benefits to children, favoring their learning, creativity, and general well-being.

Despite the documented benefits, the implementation of Environmental Education as a strategy for protecting children's mental health still faces challenges, such as the lack of adequate infrastructure in schools, the difficulty in applying active methodologies and the scarcity of specific teacher training. In addition, the limited performance of public and private agencies compromises the effective implementation of these practices. Another determining factor is the lack of encouragement on the part of families for children to develop a bond with nature, which reinforces the need for educational actions that involve not only the school, but also the community and the family environment

Thus, it is essential to develop public policies that encourage the creation of green spaces in educational institutions, as well as the training of teachers to integrate Environmental Education into the school curriculum in a systematic and effective way. In addition, it is essential to expand the involvement of public and private agencies in the implementation of environmental projects and promote awareness actions with families, encouraging the encouragement of children's contact with nature and the reduction of excessive time of exposure to screens.

Based on the research developed, it is recommended to expand scientific studies that evaluate the contributions of Environmental Education on child mental health in different contexts, both formal and non-formal. In addition, it is essential to foster interdisciplinary initiatives that combine environmental practices with innovative teaching strategies, ensuring that children have opportunities to learn and develop in healthy and stimulating environments.

Thus, it is concluded that Environmental Education not only strengthens children's relationship with the environment, but also contributes significantly to their mental health, evidencing itself as a promising pedagogical, social and family approach for the construction of a healthier and more balanced childhood. Its implementation requires the implementation of public policies that encourage the creation of green spaces in schools, the continuous training of teachers, the involvement of public and private agencies in the promotion of environmental projects and the awareness of families about the importance of children's contact with nature for their integral development.

REFERENCES

1. Bacich, L., & Moran, J. (Eds.). (2018). **Active methodologies for innovative education: A theoretical-practical approach**. Penso.
2. Bowers, E. P., Larson, L. R., & Parry, B. J. (2021). Nature as an ecological asset for positive youth development: Empirical evidence from rural communities. **Frontiers in Psychology**, *12**, Article 688574. <https://doi.org/10.3389/fpsyg.2021.688574>
3. Brazil. (1999). **Law No. 9,795, of April 27, 1999. Provides for environmental education, institutes the National Policy for Environmental Education and provides for other provisions**. Federal Official Gazette. https://www.planalto.gov.br/ccivil_03/leis/l9795.htm
4. Brazil, Ministry of Education. (2018). **National Common Curricular Base**. <http://basenacionalcomum.mec.gov.br/>
5. Brazilian Society of Pediatrics, Child, Adolescent and Nature Working Group. (2024). **Benefits of nature in the development of children and adolescents**. <https://www.sbp.com.br/>
6. Cavalcanti, C. C. (2023). **Social-emotional learning with active methodologies: A guide for educators** (1st ed.). Saraiva Uni.
7. Charan, G. S., Kalia, R., Khurana, M. S., & Narang, G. S. (2024). From screens to the sun: Rescuing children's outdoor play time in the digital age. **Journal of the Indian Association for Child and Adolescent Mental Health**, *20*(1)*, 11–17. <https://doi.org/10.1177/09731342241229845>
8. Colégio Anglo São Carlos. (2023). **Playing in child development: What is the relationship with learning and social development?** <https://www.anglosaocarlos.com.br/post/brincar-no-desenvolvimento-infantil-qual-a-relação-com-o-aprendizado-e-desenvolvimento-social>
9. Corrêa, L. A. S., Santos, C. A. F., Braga, F. C., Oliveira, H., Silva, S. L. C., & Barbosa, A. M. B. (2023). Family conflicts and difficulties in the learning process of school-age children. **Research, Society and Development**, *12*(2)*, Article e27912240358. <https://doi.org/10.33448/rsd-v12i2.40358>
10. Helbich, M., Klein, N., Roberts, H., Hagedoorn, P., & Groenewegen, P. (2018). More green space is related to less antidepressant prescription rates in the Netherlands: A Bayesian geoadaptive quantile regression approach. **Environmental Research**, *166**, 290–297. <https://doi.org/10.1016/j.envres.2018.06.010>
11. Instituto Pensi. (n.d.). **The importance of mental health in schools: Tips for parents, caregivers and educators**. <https://institutopensi.org.br/a-importancia-da-saude-mental-nas-escolas-dicas-para-pais-cuidadores-e-educadores/>
12. Kemczinski, A., Marek, J., Hounsell, M. S., & Gasparini, I. (2007). Collaboration and cooperation – relevance, competition or complementarity. **Revista Produção Online**, *7*(3)*, 1–15.

13. Laevers, F. (2014). Fundamentals of experiential education: Well-being and involvement in early childhood education. **Studies in Educational Evaluation**, *25*(58), 152–185.
14. Loose, T., Fuoco, J., Malboeuf-Hurtubise, C., Ayotte-Beaudet, J.-P., Gauvin, L., Chadi, N., & Geoffroy, M.-C. (2024). A nature-based intervention and mental health of schoolchildren. **JAMA Network Open**, *7*(11), Article e2444824. <https://doi.org/10.1001/jamanetworkopen.2024.44824>
15. Pastoral da Criança. (n.d.). **Child's emotional well-being**. <https://www.pastoraldacrianca.org.br/saude-emocional-da-crianca/bem-estar-emocional-da-crianca>
16. Patchen, A. K., Rakow, D. A., Wells, N. M., Hillson, S., & Meredith, G. R. (2022). Barriers to children's outdoor time: Experiences of teachers and principals in elementary schools. **Environmental Education Research**, *30*(1), 16–36. <https://doi.org/10.1080/13504622.2022.2099530>
17. Roberts, H., van Lissa, C., Hagedoorn, P., Kellar, I., & Helbich, M. (2019). The effect of short-term exposure to the natural environment on depressive mood: A systematic review and meta-analysis. **Environmental Research**, *177*, Article 108606. <https://doi.org/10.1016/j.envres.2019.108606>
18. Rocher, M., Silva, B., Cruz, G., Bentes, R., Lloret, J., & Yuba, E. I. (2020). Benefits of outdoor sports in blue spaces: The case of school nautical activities in Viana do Castelo. **International Journal of Environmental Research and Public Health**, *17*(22), Article 8470. <https://doi.org/10.3390/ijerph17228470>
19. United Nations Environment Programme. (2023). **Taking care of the environment collaborates with mental health**. <https://www.unep.org/pt-br/noticias-e-reportagens/story/cuidar-do-meio-ambiente-colabora-com-saude-mental>
20. Van den Bogerd, N., Hovinga, D., Hiemstra, J., & Maas, J. (2023). The potential of green schoolyards for children's healthy development: A conceptual framework. **Forests**, *14*(4), Article 660. <https://doi.org/10.3390/f14040660>
21. Vasconcelos, Y. L. C., Santos, L. T., Santos, J. F. P., & Andrade, A. R. O. (2023). The impact of excessive screen use on children's neuropsychomotor development: A systematic review. **Revista Foco**, *16*(11), 1–18. <https://doi.org/10.54751/revistafoco.v16n11-078>
22. Viana, H., Alves, A. C., Lima, J., Netto, V., & Manhani, C. (2025, January 30). **Care for children aged 10 to 14 with anxiety in the SUS rose almost 2500% from 2014 to 2024**. G1. <https://g1.globo.com/politica/noticia/2025/01/30/ansiedade-de-2014-a-2024-atendimento-a-criancas-de-10-a-14-anos-subiu-quase-2500percent-no-sus.ghtml>
23. Vygotsky, L. S. (1991). **The social formation of the mind**. Martins Fontes.



24. World Health Organization. (2018). *Mental health: Strengthening our response*. <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>