

Alternative Behaviour Management Techniques for Children with Intellectual Disability – A Review

Nirmala Chandrasekaran ¹, SriLakshmi. L ², Yamini Michelle Maran ³, Anil Kumar Ramachandran ⁴

¹Associate Professor, Department of Conservative Dentistry & Endodontics, Ragas Dental College & Hospital, The Tamil Nadu Dr.MGR Medical University, Chennai, India

²B.Ed. Special Education (ID), Managing Director, Lakshmi's Lexis World, Chennai, India

³2nd Year MBBS Student, Sri Ramachandra Institute of Higher Education and Research, Chennai, India

⁴Principal & Head of the Department of Conservative Dentistry & Endodontics, Ragas Dental College & Hospital, The Tamil Nadu Dr.MGR Medical University, Chennai, India

***Corresponding Author:** Nirmala Chandrasekaran, 1Associate Professor, Department of Conservative Dentistry & Endodontics, Ragas Dental College & Hospital, The Tamil Nadu Dr. MGR Medical University, Chennai, India.

Received Date: 15 December 2024; **Accepted Date:** 23 December 2024; **Published Date:** 31 December 2024

Citation: Nirmala Chandrasekaran, SriLakshmi. L, Yamini M. Maran, Anil K. Ramachandran, (2024), Alternative Behaviour Management Techniques for Children with Intellectual Disability – A Review, *Clinical Medical Reviews and Reports*, 6(10); DOI:10.31579/2690-8794/246

Copyright: © 2024, Nirmala Chandrasekaran. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Children with intellectual disabilities often face challenges in managing their behavior, significantly impacting their well-being and social interactions. While traditional behavior management techniques can be effective, alternative approaches may better address the diverse needs of these children. This paper reviews alternative behavior management techniques for children with intellectual disabilities, providing definitions, benefits, and examples of each method, alongside research evidence supporting their effectiveness. The review highlights the importance of these techniques in improving behaviour, social skills, and emotional well-being, ultimately enhancing quality of life and promoting independence. Emphasis is placed on the need for further research to identify the most effective methods and expand the range of options available to parents, educators, and healthcare professionals. This work offers hope for children with intellectual disabilities and their families, presenting viable alternatives that foster greater inclusion and personal development.

Keywords: intellectual disability; alternative behavior management; positive behavior support (pbs); mindfulness-based interventions; art therapy; animal-assisted therapy; challenging behaviours; emotional regulation; social skills; therapeutic approaches

Introduction

Intellectual disability (ID) is a condition that significantly affects cognitive functioning, adaptive behavior, and developmental milestones. It is characterized by limitations in intellectual abilities (e.g., reasoning, problem-solving, and learning) and difficulties in adapting to the demands of daily life. Behavioral problems such as aggression, self-injury, anxiety, and hyperactivity are common and can severely impact their quality of life and social inclusion [1-2]. Children with intellectual disabilities often face social, educational, and emotional challenges, making their care and management a multifaceted endeavour [3].

While traditional interventions, such as Applied Behaviour Analysis (ABA) and Cognitive Behavioral Therapy (CBT), are effective in many cases, their applicability may be limited due to resource constraints, cultural differences, or the need for highly individualized care [4]. Alternative behavior management techniques have emerged as complementary or substitute approaches to address these limitations [5-6].

For centuries, society has struggled to fully integrate individuals with intellectual disabilities. Misconceptions and stigmas hindered their inclusion, and formal support systems were often inadequate. Advancements in understanding and addressing ID have led to improved interventions,

though challenges remain. A critical aspect of supporting individuals with ID is managing behavioural difficulties that can arise from the condition [7].

This review explores innovative, evidence-based, and culturally adaptive methods that focus on improving behavioural outcomes for children with intellectual disabilities.

Understanding Intellectual Disabilities

Intellectual disabilities are distinct from physical or sensory disabilities, as they specifically impact cognitive and adaptive functioning. While individuals with physical disabilities may experience motor impairments or sensory deficits, their cognitive abilities often remain intact. In contrast, ID involves significant challenges in mental processes and the ability to learn or adapt to new situations [1-2].

Key characteristics of Intellectual Disability:

1. **Cognitive Limitations:** Difficulty with problem-solving, abstract thinking, and academic skills [8].
2. **Adaptive Behavior Challenges:** Impairments in social interactions, communication, and practical life skills [9].
3. **Developmental Delays:** Delays in achieving milestones like walking, talking, or learning [10].

The severity of ID can range from mild, where individuals may achieve a degree of independence with support, to profound, where individuals require intensive care throughout life [11].

The causes of intellectual disability are diverse and can be broadly classified into:

1. **Genetic Factors:** Conditions like Down syndrome, Fragile X syndrome, and Prader-Willi syndrome [12].
2. **Prenatal Influences:** Maternal infections, substance abuse, or nutritional deficiencies during pregnancy affecting fetal brain development [13].
3. **Perinatal Factors:** Birth complications such as oxygen deprivation or premature delivery leading to brain damage [14].
4. **Postnatal Causes:** Head injuries, infections like meningitis, or exposure to toxins impairing intellectual development [14].
5. **Neurobiological Mechanisms:** Structural and functional brain abnormalities, including altered neural connectivity, disruptions in synaptic functioning, or deficits in cognition and adaptive behavior. Genetic mutations impair the formation of proteins essential for neuronal communication, leading to intellectual impairments [15].

Prevalence: Intellectual disabilities affect approximately 1-3% of the global population. Both sexes and all socioeconomic groups are impacted, although certain genetic conditions (e.g., Fragile X syndrome) may show gender predispositions [16].

Detection Timeline

1. **Infancy:** Severe forms of ID may be detected shortly after birth due to physical anomalies or significant developmental delays [17].

2. **Early Childhood:** Most cases are diagnosed during the preschool years when children fail to meet cognitive or developmental milestones [18].
3. **School Age:** Milder forms of ID may not become evident until academic or social demands increase [17].

Diagnostic Methods

- **Developmental Assessments:** Tools like the Bayley Scales of Infant Development evaluate cognitive and motor milestones [19].
- **IQ Testing:** Standardized tests (e.g., WISC-IV, Stanford-Binet) measure intellectual functioning [20].
- **Medical Evaluation:** Genetic testing, brain imaging, and metabolic studies help identify underlying causes [21].

Normal Management Techniques

Behavioral and Educational Interventions

1. **Applied Behavior Analysis (ABA):** ABA uses reinforcement strategies to teach adaptive skills and reduce problem behaviours. It is highly structured and often involves one-on-one sessions [22].
2. **Cognitive Behavioral Therapy (CBT):** CBT helps children recognize and modify negative thought patterns to improve emotional regulation and behavior [23].
3. **Special Education Programs:** Tailored educational plans focus on developing functional skills in a supportive learning environment [24].

Therapeutic Approaches

1. **Speech Therapy:** Helps improve communication skills in children with verbal delays [25].
2. **Occupational Therapy:** Aims to enhance fine motor skills and daily living activities [26].
3. **Physical Therapy:** Addresses gross motor delays and coordination issues [27].

Pharmacological Management

Medications may be prescribed to address comorbid conditions such as ADHD, anxiety, or aggression [28]. Common examples include:

- **Stimulants** for attention deficits [29].
- **Antipsychotics** for severe behavioral challenges, though these can have side effects like weight gain and sedation [30].

Family and Community Support

- Educating families about the child's condition and their role in interventions is critical for ensuring consistency in care [31].
- Support groups provide emotional support and practical guidance to caregivers [32].
- Community-based programs can empower families with accessible resources and training to manage behavioral challenges effectively [33].

Challenges and Limitations of Traditional Management

□ Accessibility Barriers

- Traditional therapies such as Applied Behavior Analysis (ABA) and Cognitive Behavioral Therapy (CBT) can be resource-intensive, requiring trained professionals, one-on-one sessions, and financial investment [34].
- This makes them inaccessible to families in low-resource settings or regions with limited availability of specialists.

□ Neglect of Cultural and Contextual Factors

- Many traditional methods are designed without sufficient consideration for cultural diversity or family dynamics.
- Techniques often fail to adapt to the values, traditions, and socio-economic conditions of diverse caregiving environments [35].

□ Lack of Individualization

- Traditional approaches often adopt a one-size-fits-all model, which may not address the unique needs of children with syndromic intellectual disabilities or severe impairments [36].

□ Behavioral Resistance

- Some children with intellectual disabilities are resistant to structured and rigid interventions, making traditional methods less effective [37].
- These children may respond better to creative, flexible, or play-based interventions.

□ Focus on Deficits Rather Than Strengths

- Many traditional techniques emphasize correcting behavioral deficits rather than building on the child's strengths.
- There is a growing movement toward strength-based approaches that promote emotional well-being, creativity, and holistic development [38].

Emerging and Alternative Techniques

Alternative techniques aim to complement or replace traditional methods by incorporating innovative, less resource-intensive, and more culturally adaptive strategies [39].

1. Pharmacological and Hormonal Adjuncts

Pharmacological interventions are increasingly being studied as complementary therapies for behavior management in ID populations [40].

- **Oxytocin-Based Therapies:** Oxytocin, a hormone linked to social bonding, has been investigated for its potential to reduce social anxiety and enhance prosocial behaviours in children with intellectual disabilities, including those with autism spectrum disorder (ASD). Studies report mixed outcomes, with early-phase trials demonstrating promising results, particularly in improving eye contact and social interactions. However, more robust, long-term studies are required [41].
- **Other Pharmacological Interventions:** Medications such as risperidone and aripiprazole are commonly used to manage

aggression and irritability [42]. These can be combined with behavioural therapies to enhance overall outcomes, although potential side effects, such as weight gain and sedation, must be monitored [43].

2. Technological Innovations

Technology has opened new avenues for delivering behavior management interventions, especially in settings with limited access to therapists.

• Telemedicine:

Telemedicine platforms facilitate remote consultations, allowing caregivers to receive professional guidance on managing behavioural issues. This approach has gained momentum, particularly during the COVID-19 pandemic, and has proven effective in providing access to underserved areas [44].

- **Digital Applications and Virtual Reality (VR):** Digital tools, such as apps that track behavior patterns or VR-based simulations, are emerging as interactive ways to teach social and coping skills. VR environments can simulate real-life scenarios, helping children practice appropriate responses to various social cues in a controlled and engaging manner [45].

3. Non-Traditional Therapies

Alternative therapies emphasize creativity, play, and holistic approaches, offering a more engaging experience for children.

• Music and Art Therapy:

- **Music Therapy:** Reduces anxiety, enhances social engagement, and improves emotional regulation [46]. For example, group music sessions can encourage peer interaction in a non-verbal and low-pressure setting.
- **Art Therapy:** Provides a medium for self-expression, helping children communicate emotions they may struggle to articulate verbally [47].

- **Play Therapy:** Play therapy creates a safe and structured environment where children can explore and resolve conflicts. Techniques like role-playing allow children to practice social skills and develop emotional resilience [48].

- **Animal-Assisted Therapy (AAT):** AAT involves interaction with animals to promote emotional and social development. Activities such as petting, walking, or playing with animals create a calming effect and foster engagement. It improves emotional regulation, reduces anxiety, and enhances social interaction⁴⁹. Animal-assisted therapy can also encourage empathy and communication skills in children who struggle with these areas. Dogs, horses (equine therapy), and small animals like rabbits are commonly used for therapy sessions.

- **Mindfulness-Based Interventions:** Mindfulness techniques such as meditation, breathing exercises, and guided relaxation aim to enhance emotional regulation, reduce stress, and improve focus. Mindfulness can help children with intellectual disabilities become more aware of their emotions and reactions, fostering self-regulation and reducing anxiety. It will have a positive impact on emotional well-being, with potential improvements in attention span and stress management [50].

4. Syndrome-Specific Approaches

Children with specific syndromes may require customized behavioural interventions tailored to their unique challenges.

- Prader-Willi Syndrome (PWS):** PWS is characterized by impulsivity, food-seeking behavior, and social challenges. Structured environments, consistent routines, and impulse-control strategies are essential in managing behavioural issues [51].
- Wiedemann-Steiner Syndrome (WSS):** Children with WSS often benefit from sensory integration therapies that address hypersensitivities and improve focus [52].

- Other Syndromes:** Syndromes like Fragile X and 3q29 Deletion Syndrome often require a combination of sensory-based therapies and targeted behavioural strategies [53].

5. Cultural Adaptations

Behavioral management techniques must be culturally sensitive and accessible to families across diverse socioeconomic backgrounds. Adapting interventions to align with cultural norms and family values enhances acceptance and sustainability [54]. Storytelling and culturally significant games can be incorporated into play-based therapy.

A table comparing different behavior management techniques (traditional and alternative) based on key parameters such as scope, effectiveness, and limitations.

Technique	Description	Target Population	Strengths	Limitations
ABA	Applied Behavior Analysis, structured approach	All ID levels	Evidence-based, effective for behavior	Resource-intensive, less flexible
CBT	Cognitive restructuring therapy	Mild-to-moderate ID	Improves cognition, addresses anxiety	Requires verbal skills
Oxytocin-Based Therapy	Hormonal therapy for social behaviours	ASD, syndromic ID	Promising for social impairments	Mixed results, long-term unclear
Music Therapy	Creative therapy using music	All ID levels	Reduces anxiety, boosts engagement	Limited data on long-term impact
Play Therapy	Structured, exploratory play-based intervention	Younger children	Enhances social skills, engaging	May require customization

Challenges and Future Directions

1. Barriers to Implementation

- Resource Constraints:** Many alternative techniques require specialized tools or training, which may not be available in low-resource settings.
- Caregiver Fatigue:** The burden on caregivers to consistently apply behavioural techniques can be significant, necessitating support mechanisms.

2. Research Gaps

- There is a lack of longitudinal studies evaluating the sustainability of alternative techniques.
- More research is needed on the cultural adaptability of behaviour management interventions.

3. Integration into Care Models

Healthcare systems must integrate alternative techniques into existing care frameworks to improve accessibility. Multidisciplinary teams, including psychologists, occupational therapists, and educators, can collaborate to create individualized plans.

Conclusion

Managing behavior in children with intellectual disabilities can be challenging, but alternative techniques offer promising solutions tailored to their diverse needs. Approaches such as positive behavior support strategies, mindfulness-based interventions, art therapy, animal-assisted therapy, and pharmacological adjuncts can significantly improve behavior, social skills, and emotional well-being. These methods not only address behavioral

challenges but also promote emotional regulation, reduce stress and anxiety, and enhance social interactions, ultimately improving the quality of life for children and their families.

The importance of integrating these innovative and culturally adaptive strategies cannot be overstated. Effective behavior management plays a pivotal role in fostering greater independence, inclusion, and holistic development for children with intellectual disabilities. Clinicians and caregivers can achieve better outcomes by adopting creative therapies and culturally relevant practices, ensuring interventions are accessible and individualized. Investigating these approaches will provide parents, educators, and healthcare professionals with a broader range of evidence-based options, helping to overcome implementation barriers and refine care models. By advancing research and innovation, we can pave the way for more inclusive and effective solutions, offering hope for improved quality of life and greater independence for children with intellectual disabilities.

References:

- Deshmukh DV (2016). Strategies used to modify the behaviours of children with intellectual disability. *Indian Journal of Health and Wellbeing*. 2016 Jul 1;7(7):753-6.
- Grey IM, Hastings RP (2005). Evidence-based practices in intellectual disability and behaviour disorders. *Current opinion in psychiatry*. 2005 Sep 1;18(5):469-75.
- Ali A, Blickwedel J, Hassiotis A (2014). Interventions for challenging behaviour in intellectual disability. *Advances in psychiatric treatment*. 2014 May;20(3):184-92.
- Matson JL, Dixon DR, Matson ML (2005). Assessing and treating aggression in children and adolescents with developmental disabilities: a 20-year overview. *Educational Psychology*. 2005 Apr 1;25(2-3):151-81.

5. Stoesz BM, Shooshtari S, Montgomery J, Martin T, Heinrichs DJ, Douglas J (2016). Reduce, manage or cope: a review of strategies for training school staff to address challenging behaviours displayed by students with intellectual/developmental disabilities. *Journal of Research in Special Educational Needs*. 2016 Jul;16(3):199-214.
6. Prior D, Win S, Hassiotis A, Hall I, Martiello MA, Ali AK (2023). Behavioural and cognitive-behavioural interventions for outwardly directed aggressive behaviour in people with intellectual disabilities. *Cochrane database of systematic reviews*. 2023(2).
7. Meyer LH, Evans IM (2006). Literature review on intervention with challenging behaviour in children and youth with developmental disabilities. Victoria University of Wellington, College of Education; 2006 Dec.
8. Guinungco H, Roman A (2020). Abstract Reasoning and Problem-Solving Skills of First Year College Students. *Southeast Asian Journal of Science and Technology*. 2020 Jul 1;5(1):33-9.
9. Tassé MJ (2021). Adaptive behavior and functional life skills across the lifespan: Conceptual and measurement issues. In *Adaptive behavior strategies for individuals with intellectual and developmental disabilities: Evidence-based practices across the life span 2021* Apr 30 (pp. 1-20). Cham: Springer International Publishing.
10. Brosnan J, Healy O (2011). A review of behavioral interventions for the treatment of aggression in individuals with developmental disabilities. *Research in developmental disabilities*. 2011 Mar 1;32(2):437-46.
11. Esteban L, Navas P, Verdugo MÁ, Arias VB (2021). Community living, intellectual disability and extensive support needs: a rights-based approach to assessment and intervention. *International Journal of Environmental Research and Public Health*. 2021 Mar 19;18(6):3175.
12. Wolfe K, Strydom A, Bass N, Scheepers M, Kerr M (2019). Genetics of intellectual disability. In *Seminars in the psychiatry of intellectual disability 2019* Jan 31 (pp. 12-27). Cambridge University Press.
13. Graf WD, Kekatpure MV, Kosofsky BE (2013). Prenatal-onset neurodevelopmental disorders secondary to toxins, nutritional deficiencies, and maternal illness. *Handbook of clinical neurology*. 2013 Jan 1;111:143-59.
14. Carlier M, Roubertoux PL (2013). Genetic and environmental influences on intellectual disability in childhood. In *Behavior genetics of cognition across the lifespan 2013* Jul 9 (pp. 69-101). New York, NY: Springer New York.
15. Kroon T, Sierksma MC, Meredith RM (2013). Investigating mechanisms underlying neurodevelopmental phenotypes of autistic and intellectual disability disorders: a perspective. *Frontiers in systems neuroscience*. 2013 Oct 31;7:75.
16. Naz S, Ibrahim N, Sharif S, Bashir N, Sajjad E, Asghar I, Irshad S, Firasat S, Kaul H, Sarwar S (2021). Prevalence and association of different levels of intellectual disability with prenatal, perinatal, neonatal and postnatal factors: prevalence and association of levels of ID. *Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences*. 2021 Sep 18;58(3):75-82.
17. West SC, Kaniok P (2009). Strategies for Crisis Intervention and Prevention-Revised as a Current Proposal in Care of Individuals with Intellectual Disabilities and Challenging Behaviours. *International Journal of Special Education*. 2009;24(1):1-7.
18. Chowdhury M, Benson BA (2011). Use of differential reinforcement to reduce behavior problems in adults with intellectual disabilities: A methodological review. *Research in Developmental Disabilities*. 2011 Mar 1;32(2):383-94.
19. Kurtz PF, Leoni M, Hagopian LP (2020). Behavioral approaches to assessment and early intervention for severe problem behavior in intellectual and developmental disabilities. *Pediatric Clinics*. 2020 Jun 1;67(3):499-511.
20. Tylanda B, Beckett J, Barrett RP (2007). Assessing mental retardation using standardized intelligence tests. *International Review of Research in Mental Retardation*. 2007 Jan 1;34:27-97.
21. Deb S, Limbu B, Unwin GL, Weaver T (2022). Causes of and alternatives to medication for behaviours that challenge in people with intellectual disabilities: direct care providers' perspectives. *International Journal of Environmental Research and Public Health*. 2022 Aug 13;19(16):9988.
22. Chung KM, Chung E, Lee H (2024). Behavioral interventions for autism spectrum disorder: a brief review and guidelines with a specific focus on applied behavior analysis. *Journal of the Korean Academy of Child and Adolescent Psychiatry*. 2024 Jan 1;35(1):29.
23. Suveg C, Sood E, Comer JS, Kendall PC (2009). Changes in emotion regulation following cognitive-behavioral therapy for anxious youth. *Journal of Clinical Child & Adolescent Psychology*. 2009 May 19;38(3):390-401.
24. Iemmi V, Knapp M, Brown FJ (2016). Positive behavioural support in schools for children and adolescents with intellectual disabilities whose behaviour challenges: An exploration of the economic case. *Journal of Intellectual Disabilities*. 2016 Sep;20(3):281-95.
25. Gates B, Newell R, Wray J (2001). Behaviour modification and gentle teaching workshops: management of children with learning disabilities* exhibiting challenging behaviour and implications for learning disability nursing. *Journal of Advanced Nursing*. 2001 Apr;34(1):86-95.
26. Akinola, Akinoyemi A (2009). "A Project to Initiate a Supported Lifestyle for Learning Disabled and Autistic Young Adults in an Oxford." (2009).
27. Hipolito MY, Santos PG (2020). Behavioral management strategies employed by DSWD house parent to children with intellectual disabilities. *Asian Journal of Multidisciplinary Studies*. 2020 Mar 20;3(2).
28. Pliszka SR (2009). Treating ADHD and comorbid disorders: Psychosocial and psychopharmacological interventions. Guilford Press; 2009 May 20.
29. Swanson J (2003). Compliance with stimulants for attention-deficit/hyperactivity disorder: issues and approaches for improvement. *CNS drugs*. 2003 Feb;17:117-31.
30. Shafiq S, Pringsheim T (2018). Using antipsychotics for behavioral problems in children. Expert opinion on pharmacotherapy. 2018 Sep 2;19(13):1475-88.
31. Sanders MR (1999). Triple P-Positive Parenting Program: Towards an empirically validated multilevel parenting and family support strategy for the prevention of behavior and emotional problems in children. *Clinical child and family psychology review*. 1999 Jun;2:71-90.
32. Daynes-Kearney R, Gallagher S (2023). Online Support Groups for Family Caregivers: Scoping Review. *Journal of Medical Internet Research*. 2023 Dec 13;25:e46858.

33. Olin SS, Hoagwood KE, Rodriguez J, Ramos B, Burton G, Penn M, Crowe M, Radigan M, Jensen PS (2010). The application of behavior change theory to family-based services: Improving parent empowerment in children's mental health. *Journal of child and family studies*. 2010 Aug;19:462-70.
34. Preas E, Carroll RA, Van Den Elzen G, Halbur M, Harper M (2023). Evaluating the use of video modeling with voiceover instructions to train therapists to deliver caregiver training through telehealth. *Behavior Modification*. 2023 Mar;47(2):402-31.
35. Preciado J (2012). Culture in Ibero-America: A neglected issue in behavioral and cognitive randomized control trial interventions. *International Journal of Clinical and Health Psychology*. 2012;12(3):489-501.
36. Buntinx WH, Schalock RL(2010). Models of disability, quality of life, and individualized supports: Implications for professional practice in intellectual disability. *Journal of policy and practice in intellectual disabilities*. 2010 Dec;7(4):283-94.
37. Gresham FM (2002). Responsiveness to intervention: An alternative approach to the identification of learning disabilities. In *Identification of learning disabilities 2002 Dec 18* (pp. 467-519). Routledge.
38. Soni S, Hameed N (2018). Strength-Based Approaches to Mental Health Promotion in Schools: An Overview. *Positive Schooling and Child Development: International Perspectives*. 2018:127-48.
39. Glanzman MM, Toomey M(2016). Complementary and alternative therapies. *Handbook of evidence-based practices in intellectual and developmental disabilities*. 2016:243-82.
40. Sarris J, Moylan S, Camfield DA, Pase MP, Mischoulon D, Berk M, Jacka FN, Schweitzer I (2012). Complementary medicine, exercise, meditation, diet, and lifestyle modification for anxiety disorders: a review of current evidence. *Evidence-Based Complementary and Alternative Medicine*. 2012;2012(1):809653.
41. Guastella AJ, Hickie IB (2016). Oxytocin treatment, circuitry, and autism: a critical review of the literature placing oxytocin into the autism context. *Biological psychiatry*. 2016 Feb 1;79(3):234-42.
42. Rizzo R, Pavone P (2016). Aripiprazole for the treatment of irritability and aggression in children and adolescents affected by autism spectrum disorders. *Expert Review of Neurotherapeutics*. 2016 Aug 2;16(8):867-74.
43. Morrison AP, Law H, Carter L, Sellers R, Emsley R, Pyle M, French P, Shiers D, Yung AR, Murphy EK, Holden N (2018). Antipsychotic drugs versus cognitive behavioural therapy versus a combination of both in people with psychosis: a randomised controlled pilot and feasibility study. *The Lancet Psychiatry*. 2018 May 1;5(5):411-23.
44. Rogers DG, Santamaria K, Seng EK, Grinberg AS (2022). Behavioral health, telemedicine, and opportunities for improving access. *Current Pain and Headache Reports*. 2022 Dec;26(12):919-26.
45. Zhang M, Ding H, Naumceska M, Zhang Y (2022). Virtual reality technology as an educational and intervention tool for children with autism spectrum disorder: current perspectives and future directions. *Behavioral Sciences*. 2022 May 10;12(5):138.
46. Ghasemtabar SN, Hosseini M, Fayyaz I, Arab S, Naghashian H, Poudineh Z (2015). Music therapy: An effective approach in improving social skills of children with autism. *Advanced biomedical research*. 2015 Jan 1;4(1):157.
47. Glanzman MM, Toomey M (2016). Complementary and alternative therapies. *Handbook of evidence-based practices in intellectual and developmental disabilities*. 2016:243-82.
48. Patel M. *Integrating Play Therapy In Pediatric Nursing: Utilizing Play As A Therapeutic Tool For Children In Healthcare Settings*.
49. Schmid EK. The effects of animal-assisted activities on the social and emotional development of young children with characteristics of emotional behavioral disorders.
50. Zhang D, Lee EK, Mak EC, Ho CY, Wong SY (2021). Mindfulness-based interventions: an overall review. *British medical bulletin*. 2021 Jun;138(1):41-57.
51. Joly, Gwendoline (2022). "How to Provide Holistic Care for Disabled People Affect-ed by Prader-Willi Syndrome: A descriptive literature review." (2022).
52. Ng R, Kalinousky A, Fahrner JA, Bjornsson HT, Harris J (2023). The social phenotype associated with Wiedemann-Steiner syndrome: Autistic traits juxtaposed with high social drive and prosociality. *American Journal of Medical Genetics Part A*. 2023 Oct;191(10):2591-601.
53. Pollak RM, Burrell TL, Cubells JF, Klaiman C, Murphy MM, Saulnier CA, Walker EF, White SP, Mulle JG (2024). Adaptive behaviour deficits in individuals with 3q29 deletion syndrome. *Journal of Intellectual Disability Research*. 2024 Feb;68(2):113-27.
54. Pearson JN, Akamoglu Y, Chung M, Meadan H (2019). Building family-professional partnerships with culturally, linguistically, and economically diverse families of young children. *Multicultural Perspectives*. 2019 Oct 2;21(4):208-16.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

Submit Manuscript

DOI: [10.31579/2690-8794/246](https://doi.org/10.31579/2690-8794/246)

Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more <https://auctoresonline.org/journals/clinical-medical-reviews-and-reports>