An Updated Review of Literature on the Social, Emotional, and Behavioural Adjustment of Siblings of Autistic Individuals

Stephanie M Andreasen¹, Heidi O'Brien^{1,2}, Carly McMorris^{1,2}, Brianne K Redquest^{1,2}

¹School and Applied Child Psychology, Werklund School of Education, University of Calgary, Calgary, AB, Canada

²Alberta Children's Hospital Research Institute (ACHRI), University of Calgary, Calgary, AB, Canada





Introduction/Rationale

Research has been shifting to explore the impact of a child with autism in the context of a family system, particularly siblings as it is one of the longest bonds in a child's life¹.

Siblings of autistic individuals report high levels of stress, worry for the future, and increased responsibilities².

Research also shows that there are many benefits that these siblings also experience including enhanced understanding of others, sharing a unique bond with their autistic sibling, and increased self-competence³.

Meadan et al.⁵ conducted a review to explore the social, emotional, and behavioural adjustments of siblings of autistic individuals.

Meadan et al.⁵ found the literature showed mixed results on outcomes for siblings' adjustment and limited research had been completed that addressed these areas.

The purpose of the current study is to update the review conducted by Meadan and colleagues and summarize the literature conducted after 2009 that explores the experiences and dynamics of sibling relationships in families of autistic individuals.

Method

An electronic search was conducted using ERIC and PsycINFO databases. Keywords used in the electronic search included, but were not limited to, autism, siblings, and social adjustment.

Inclusion criteria:

- Published in English between 2009 and 2021
- Peer-reviewed research article (books, dissertations, reviews, and meta-analyses were excluded)
- Reference sibling health and adjustment (parent and family focused studies were excluded)

Potential articles were reviewed by research team for inclusion and exclusion.

Similar to Meadan et al.⁵, we used the themes outlined by Hodapp et al.⁴ to guide data extraction. These themes were:

- Methodological challenges;
- Measurement tools;
- Addressing developmental and life-course perspectives;
- Exploring mediators and moderators;
- Cultural and subcultural issues; and
- Balanced portrayal of outcomes (both positive and negative).

Findings

After applying inclusion and exclusion criteria, 67 articles were reviewed. Preliminary findings are focused on the theme of mediators and moderators (n = 37 articles).

Demographics of siblings of children with autism were commonly discussed:

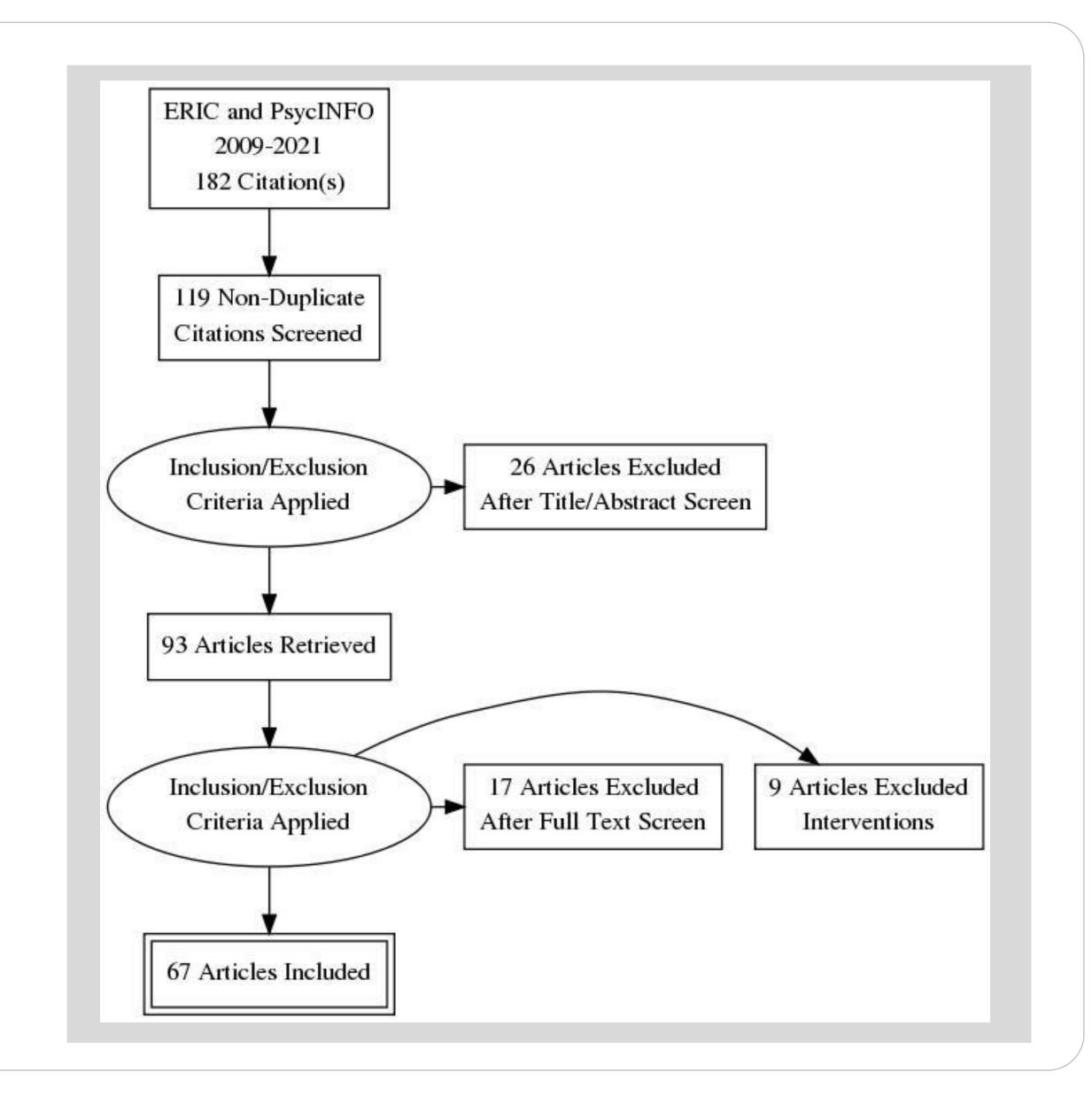
- Age of both siblings^{6, 12, 15, 19, 21, 25, 26, 44}
- Gender^{8, 12, 14, 26, 43, 44}
- Birth order (i.e., whether sibling with autism was older or younger)^{12, 14, 26, 37, 40, 42, 43, 44}

Family environment factors:

- Sibling understanding of and attitude toward autism^{9, 10, 13, 15, 16, 19, 25, 27, 35}
- Cultural influences (social stigma, social support, collective culture)^{8, 11, 13, 18, 34, 39, 40}
- Family stress levels^{7, 17, 18, 21, 34, 36, 39, 42}

Behavioural symptoms in family members:

- Broader Autism Phenotype (BAP)
- In parent^{33, 41}
- In siblings^{22, 23, 41, 42, 43}
- Maternal anxiety, depression, and well-being^{17, 22, 24, 28, 33}
- Internalizing and externalizing behaviors, including autism symptom severity in the autistic sibling^{16, 20, 22, 23, 29, 30, 31, 32, 38, 43}



Discussion/Implications

Meadan et al.⁵ reviewed the literature up to 2008 and found 12 articles addressing sibling adjustment. In our search of the literature from 2009 to 2021, we found a total of 67 studies that examined the adjustment of siblings.

In Meadan et al.'s⁵ discussion of mediators and moderators, they identified a trend of the research identifying factors, predictors, and variables as opposed to using the terms mediators and moderators.

• Our review identified a similar trend.

In addition to the factors of gender, birth order, and levels of family support and maternal stress that were originally identified by Meadan et al.⁵, the current review also identified the following variables in sibling adjustment:

- Age (of both sibling and autistic child);
- Sibling understanding of autism;
- Cultural influences;
- Presence of the Broader Autism Phenotype (BAP) in parents and/or siblings;
- Presence of internalizing and externalizing behaviours in autistic child (including autism symptom severity).

Overall, the majority of articles (84%) reported significant associations between factors while Meadan et al.'s⁵ review presented more balanced results. This could be a result of publication bias and should be addressed in future research studies.

A limitation in the current literature is that there were no studies of paternal well-being and its impact on the adjustment of typically developing siblings of children with autism.

Understanding the risk factors for poor adjustment of siblings of children with autism allows clinicians to identify the likelihood of a sibling requiring intervention.

Interventions should focus on environment factors such as addressing sibling's understanding of and attitude toward autism, increasing social support and resources in cultures with more stigma towards autism, and decreasing family stress levels.

Interventions focusing on parents, particularly mothers, should also be considered, as maternal anxiety, depression, and well-being were shown to be strong predictors of sibling adjustment.

References

Please see following slide for references.

Primary Contact: Stephanie Andreasen Stephanie.Andreasen@ucalgary.ca

An Updated Review of Literature on the Social, Emotional, and Behavioural Adjustment of Siblings of Autistic Individuals

Stephanie M Andreasen¹, Heidi O'Brien^{1,2}, Carly McMorris^{1,2}, Brianne K Redquest^{1,2}

¹School and Applied Child Psychology, Werklund School of Education, University of Calgary, Calgary, AB, Canada

²Alberta Children's Hospital Research Institute (ACHRI), University of Calgary, Calgary, AB, Canada





References

- 1. Orsmond, G. I., & Seltzer, M. M. (2007). Siblings of individuals with Autism Spectrum Disorders across the life course. Mental Retardation and Developmental Disabilities Research Reviews, 13(4), 313-320. https://doi.org/10.1002/mrdd.20171
- 2. Whiteman, S. D., McHale, S. M., & Soli, A. (2011). Theoretical perspectives on sibling relationships. Journal of family theory & review, 3(2), 124-139. https://doi.org/10.1111/j.1756-2589.2011.00087.x
- 3. Watson, L., Hanna, P., & Jones, C. J. (2021). A systematic review of the experience of being a sibling of a child with an autism spectrum disorder. Clinical Child Psychology and Psychiatry, 26(3), 734-749. https://doi.org/10.1177/13591045211007921
- 4. Hodapp, R. M., Glidden, L. M., & Kaiser, A. P. (2005). Siblings of persons with disabilities: Toward a research agenda. Mental retardation, 43(5), 334-338.
- 5. Meadan, H., Stoner, J. B., & Angell, M. E. (2009). Review of literature related to the social, emotional, and behavioral adjustment of siblings of individuals with Autism Spectrum Disorder. Journal of Developmental and Physical Disabilities, 22(1), 83-100. https://doi.org/10.1007/s10882-009-9171-7
- 6. Angell, M. E., Meadan, H., & Stoner, J. B. (2012). Experiences of siblings of individuals with autism spectrum disorders. Autism research and treatment, 2012. https://doi.org/10.1155/2012/949586
- 7. Barak-Levy, Y., Goldstein, E., & Weinstock, M. (2010). Adjustment characteristics of healthy siblings of children with autism. Journal of Family Studies, 16(2), 155-164. https://doi.org/10.5172/jfs.16.2.155
- 8. Chan, J. Y., & Lai, K. Y. (2016). Psychological adjustment of siblings of children with autism spectrum disorder in Hong Kong. East Asian Archives of Psychiatry, 26(4), 141-147.
- 9. Coffman, M. C., Kelso, N., Antezana, L., Braconnier, M., Richey, J. A., & Wolf, J. (2021). Understanding of ASD by Siblings is Associated with Warmth and Hostility in the Siblings is Associated w
- 10. Cridland, E. K., Jones, S. C., Stoyles, G., Caputi, P., & Magee, C. A. (2016). Families living with autism and Other Developmental Disabilities, 31(3), 196-207. https://doi.org/10.1177/1088357615583466
- 11. Dansby, R. A., Turns, B., Whiting, J. B., & Crane, J. (2018). A phenomenological content analysis of online support seeking by siblings of people with autism. Journal of Family Psychotherapy, 29(3), 181-200. https://doi.org/10.1080/08975353.2017.1395256
- 12. Di Biasi, S., Trimarco, B., D'Ardia, C., Melogno, S., Meledandri, G., & Levi, G. (2015). Psychological Adjustment, Social Responsiveness and Parental Distress in an Italian Sample of Siblings of Children with High-Functioning Autism Spectrum Disorder. Journal of Child and Family Studies, 25(3), 883–890. https://doi.org/10.1007/s10826-015-0256-x
- 13. Dempsey, A. G., Llorens, A., Brewton, C., Mulchandani, S., & Goin-Kochel, R. P. (2011). Emotional and Behavioral Adjustment in Typically Developing Siblings of Children with Autism Spectrum Disorders. Journal of Autism and Developmental Disorders, 42(7), 1393–1402. https://doi.org/10.1007/s10803-011-1368-9
- 14. Guidotti, L., Musetti, A., Barbieri, G. L., Ballocchi, I., & Corsano, P. (2021). Conflicting and harmonious siblings of children with autism spectrum disorder. Child: Care, Health & Development, 47(2), 163–173. https://doi.org/10.1111/cch.12823
- 15. Hallett, V., Ronald, A., Colvert, E., Ames, C., Woodhouse, E., Lietz, S., Garnett, T., Gillan, N., Rijsdijk, F., Scahill, L., Bolton, P., & Happé, F. (2013). Exploring anxiety symptoms in a large-scale twin study of children with autism spectrum disorders, their co-twins and controls. Journal of Child Psychology and Psychiatry, 54(11), 1176–1185. https://doi.org/10.1111/jcpp.12068
- 16. Hastings, R. P., & Petalas, M. A. (2014). Self-reported behaviour problems and sibling relationship quality by siblings of children with autism spectrum disorder. Child: Care, Health & Development, 40(6), 833–839. https://doi.org/10.1111/cch.12131
- 17. Inam, A., Kausar, R., & Abiodullah, M. (2017). Does having a sibling with autism affect one's self concept? an empirical research. Isra Medical Journal, 9(3), 166-170.
- 18. Inam, A., & Kausar, R. (2016). Psychological adjustment of typical siblings of children with autism in the context of family environment. Isra Medical Journal, 8(3), 176-181.
- 19. Taylor Johnson, M., Williamson, R. L., Casey, L. B., Stockton, M., & Elswick, S. (2020). Sibling relationships when one sibling has ASD: A preliminary investigation to inform the field and strengthen the bond. Children and Youth Services Review, 116, 105190. https://doi.org/10.1016/j.childyouth.2020.105190
- 20. Jones, E. A., Fiani, T., Stewart, J. L., Sheikh, R., Neil, N., & Fienup, D. M. (2019). When One Sibling Relationship. Journal of Child and Family Studies, 28(5), 1272–1282. https://doi.org/10.1007/s10826-019-01374-z
- 21. Laghi, F., Lonigro, A., Pallini, S., Bechini, A., Gradilone, A., Marziano, G., & Baiocco, R. (2017). Sibling Relationships and Family Functioning in Siblings of Early Adolescents and Young Adults with Autism Spectrum Disorder. Journal of Child and Family Studies, 27(3), 793–801. https://doi.org/10.1007/s10826-017-0921-3
- 22. Meyer, K. A., Ingersoll, B., & Hambrick, D. Z. (2011). Factors influencing adjustment in siblings of children with autism Spectrum Disorders, 5(4), 1413–1420. https://doi.org/10.1016/j.rasd.2011.01.027
- 23. Mohammadi, M., & Zarafshan, H. (2014). Family function, Parenting Style and Broader Autism Phenotype as Predicting Factors of Psychiatry, 9(2), 55–63.
- 24. Orsmond, G. I., & Seltzer, M. M. (2009). Adolescent Siblings of Individuals with an Autism Spectrum Disorder: Testing a Diathesis-Stress Model of Sibling Well-Being. Journal of Autism and Developmental Disorders, 39(7), 1053–1065. https://doi.org/10.1007/s10803-009-0722-7
- 25. Orsmond, G. I., Kuo, H.-Y., & Seltzer, M. M. (2009). Siblings of individuals with an autism spectrum disorder. Autism: the International Journal of Research and Practice, 13(1), 59–80. https://doi.org/10.1177/1362361308097119
- 26. Petalas, M. A., Hastings, R. P., Nash, S., Lloyd, T., & Dowey, A. (2009). Emotional and behavioural adjustment in siblings of children with intellectual disability with and without autism. Autism: the International Journal of Research and Practice, 13(5), 471–483. https://doi.org/10.1177/1362361309335721
- 27. Pollard, C. A., Barry, C. M., Freedman, B. H., & Kotchick, B. A. (2012). Relationship Quality as a Moderator of Anxiety in Siblings of Child and Family Studies, 22(5), 647–657. https://doi.org/10.1007/s10826-012-9618-9
- 28. Quintero, N., & McIntyre, L. L. (2010). Sibling Adjustment and Maternal Well-Being: An Examination of Families With an Autism and Other Developmental Disabilities, 25(1), 37–46. https://doi.org/10.1177/1088357609350367
- 29. Rao, P. A., & Beidel, D. C. (2009). The Impact of Children with High-Functioning Autism on Parental Stress, Sibling Adjustment, and Family Functioning. Behavior Modification, 33(4), 437–451. https://doi.org/10.1177/0145445509336427
- 30. Rixon, L., Hastings, R. P., Kovshoff, H., & Bailey, T. (2021). Sibling Adjustment and Sibling Relationships Associated with Clusters of Needs in Children with Autism: A Novel Methodological Approach. Journal of Autism and Developmental Disorders, 51(11), 4067–4076. https://doi.org/10.1007/s10803-020-04854-0
- 31. Rodgers, J. D., Warhol, A., Fox, J. D., McDonald, C. A., Thomeer, M. L., Lopata, C., Darrow, A. M., Szyszkowski, A. L., Biscotto, A. A., & Sheffield, T. (2016). Minimal Risk of Internalizing Problems in Typically-Developing Siblings of Children with High-Functioning Autism Spectrum Disorder. Journal of Child and Family Studies, 25(8), 2554–2561. https://doi.org/10.1007/s10826-016-0407-8
- 32. Rosa, M., Puig, O., Lázaro, L., & Calvo, R. (2016). Socioeconomic status and intelligence quotient as predictors of psychiatric disorders in children and adolescents with high-functioning autism spectrum disorder and in their siblings. Autism: the International Journal of Research and Practice, 20(8), 963—972. https://doi.org/10.1177/1362361315617881
- 33. Shivers, C. M., Deisenroth, L. K., & Taylor, J. L. (2012). Patterns and predictors of anxiety among siblings of children with autism spectrum disorders. Journal of Autism and Developmental Disorders, 43(6), 1336–1346. https://doi.org/10.1007/s10803-012-1685-7
- 34. Tomeny, T. S., Barry, T. D., & Fair, E. C. (2017). Parentification of adult siblings of individuals with autism spectrum disorder: Distress, sibling relationship attitudes, and the role of social support. Journal of Intellectual & Developmental Disability, 42(4), 320–331. https://doi.org/10.3109/13668250.2016.1248376
- 35. Tomeny, T. S., Ellis, B. M., Rankin, J. A., & Barry, T. D. (2017). Sibling relationship quality and psychosocial outcomes among adult siblings of individuals with autism spectrum disorder and individuals with intellectual disability without autism. Research in Developmental Disabilities, 62, 104–114. https://doi.org/10.1016/j.ridd.2017.01.008
- 36. Tomeny, T. S., Baker, L. K., Barry, T. D., Eldred, S. W., & Rankin, J. A. (2016). Emotional and behavioral functioning of typically-developing sisters of children with autism spectrum disorder: The roles of ASD severity, parental stress, and marital status. Research in Autism Spectrum Disorders, 32, 130–142. https://doi.org/10.1016/j.rasd.2016.09.008
- 37. Tomeny, T. S., Barry, T. D., & Bader, S. H. (2014). Birth order rank as a moderator of the relation between behavior problems among children with an autism spectrum disorder and their siblings. Autism: the International Journal of Research and Practice, 18(2), 199–202. https://doi.org/10.1177/1362361312458185
- 38. Tomeny, T. S., Barry, T. D., & Bader, S. H. (2012). Are typically-developing siblings of children with an autism Spectrum Disorders, 6(1), 508–518. https://doi.org/10.1016/j.rasd.2011.07.012
- 39. Tsai, H. W., Cebula, K., & Fletcher-Watson, S. (2016). Influences on the psychosocial adjustment of siblings of children with autism Spectrum Disorders, 32, 115–129. https://doi.org/10.1016/j.rasd.2016.09.007
- 40. Tsai, H. W., Cebula, K., Liang, S. ., & Fletcher-Watson, S. (2018). Siblings' experiences of growing up with children with autism in Taiwan and the United Kingdom. Research in Developmental Disabilities, 83, 206–216. https://doi.org/10.1016/j.ridd.2018.09.001
- 41. Tsai, H. W., Cebula, K., & Fletcher-Watson, S. (2017). The Role of the Broader Autism Phenotype and Environmental Stressors in the Adjustment of Siblings of Children with Autism Spectrum Disorders in Taiwan and the United Kingdom. Journal of Autism and Developmental Disorders, 47(8), 2363–2377. https://doi.org/10.1007/s10803-017-3134-0
- 42. Walton, K. M., & Ingersoll, B. R. (2015). Psychosocial Adjustment and Sibling Relationships in Siblings of Children with Autism and Developmental Disorders, 45(9), 2764–2778. https://doi.org/10.1007/s10803-015-2440-7
- 43. Walton, K. M. (2016). Risk factors for behavioral and emotional difficulties in siblings of children with autism spectrum disorder. American Journal on Intellectual and Developmental Disabilities, 121(6), 533-549.
- 44. Ward, B., Tanner, B. S., Mandleco, B., Dyches, T. T., & Freeborn, D. (2016). Sibling Experiences: Living with Young Persons with Autism Spectrum Disorders. *Pediatric Nursing*, 42(2), 69–76.