

## Interventions for Autism Spectrum Disorder Communities: A Scoping Review

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### ABSTRACT

Autism spectrum disorder (ASD) is a chronic neurodevelopmental disorder that has become a significant global health concern. The rising prevalence of ASD across many countries has impacted individual and family due to extensive medical care, behavioural therapies and educational support. Studies reported that early intervention may reduce the financial and social burden on families and healthcare. As ASD presents in diverse characteristics, the necessity for tailored specific interventions is required. Therefore, this study aims to conduct a scoping review of articles which have evaluated intervention for ASD. Articles with keywords, titles or abstracts and free access for full article containing the terms 'Autism' OR 'Autism Spectrum Disorder' OR 'ASD' AND 'Intervention' OR 'Best Practices' OR 'strategies' were identified from PubMed and ScienceDirect. Type of intervention and specific characteristic of ASD between 2020 to 2024 were extracted from selected articles. Of 1017 studies identified, 70 articles were selected. This review demonstrated the need for further studies to address several issues including specific target participants and effectiveness of each intervention towards mixed characteristics.

**Keywords:** Autism Spectrum Disorder, intervention

### INTRODUCTION

Autism spectrum disorder (ASD) is a significant global health concern, contributing substantially to the burden of mental health disorders across nationality, ethnicity or social status. According to the World Health Organisation (WHO) (2023), it is estimated that 1 in 100 children has ASD. However, Institute for Public Health of Malaysia reports a higher prevalence which is 1 in 68 children has ASD (Kaur et al., 2015). Furthermore, Elsabbagh et al., (2012) stated higher prevalence rates of ASD among boys compared to girls. As the prevalence of ASD continues to rise, awareness among Malaysian is currently focusing on public policy, raising awareness, and prioritizing research on ASD.

ASD is a lifelong neurodevelopmental condition, which interferes a person's ability to communicate and socialize with symptoms ranging from mild to severe (World Health Organisation, 2023 & Hahler & Elsabbagh, 2014). It is difficult to diagnose ASD before the age of eighteen months, as the behavioral symptoms have not yet emerged. The severity of the symptoms varies widely, but affected individuals often struggle with communication, and social interaction as well as prone to engage in repetitive behaviors. The symptom commonly includes speech delays, lack of interactive play, limited empathy, and social withdrawal. Children with ASD may also act out such as screaming or crying to express their needs, face restriction in school or daycare placement and are at increased risk of victimization.

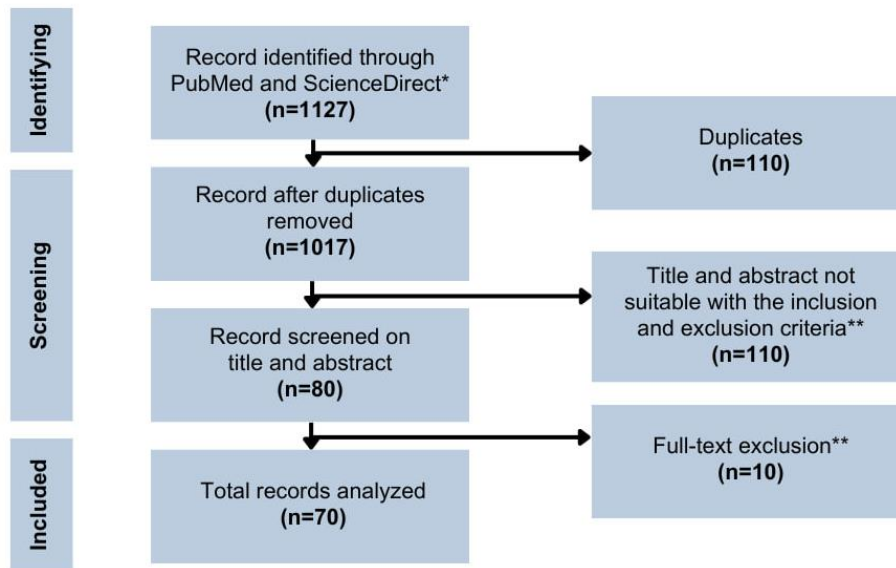
This lifelong condition present challenges not only for individual with ASD but also for their caregivers, who often encounter substantial emotional, psychological, and practical challenges in providing care (Factor et al., 2019 & Azmi et al., 2022). Approximately 67 million people are affected by ASD globally (Mona, 2012). Myriad studies documented the impact of ASD on caregiver's mental health, stress level and family dynamics (Factor et al., 2019). Patel et al., (2022) identified that the caregiver of children and adolescent with ASD experiences a high burden of care and reduced quality of life especially those in low-income families and children of age group 6-12 years.

The increased prevalence of ASD has also led to a growing demand for effective educational and therapeutic services. Studies on intervention increasingly supports practices that positively impact outcomes for both ASD and their caregiver. Collaborative support system involving family members, communities and institutional agencies are essential for providing prevention, treatments programmes, resources and knowledge to improve the quality of individual with ASD. Numerous studies highlighted the positive outcome on intervention in setting such as schools, clinics, community spaces, emphasizing the importance of involving caregiver and children. While, much discussion surrounds the conceptualization of autism as a disability or as a set of unique skills, early intervention remains widely recognized for improving social skills, communication abilities, and adaptive behaviors in children with ASD. Simultaneously, understanding and addressing the needs of caregivers is critical for reducing their stress, improving coping strategies, and promoting healthier family dynamics.

While many intervention studies separately target either child with ASD and caregiver, this study aims to conduct a scoping review of articles that have evaluated interventions for children with ASD and the caregivers across various dimensions. It is postulates to provide insights into effective intervention models to be referred, identify gaps in the current literature, and provide guidance for future research directions.

## METHODOLOGY

This study applying systematic search using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method. The databases of PubMed and ScienceDirect were searched for article published between 2020 and 2024 containing the terms 'Autism' OR 'Autism Spectrum Disorder' OR 'ASD' AND 'Intervention' OR 'Best Practices' OR 'Strategies' within keywords, or within their article titles or abstracts which included non-invasive intervention in medical, engineering and technology fields (Figure 1). Only English language articles and free access to full articles were included. From the initial 1017 titles identified from the database search, a total of 70 articles were selected. Information extracted from selected articles included target intervention, focus of intervention and outcome for dimension of intervention. The target intervention is among children with ASD, adolescence with ASD, parent of children with ASD and instructor or teacher of children with ASD.



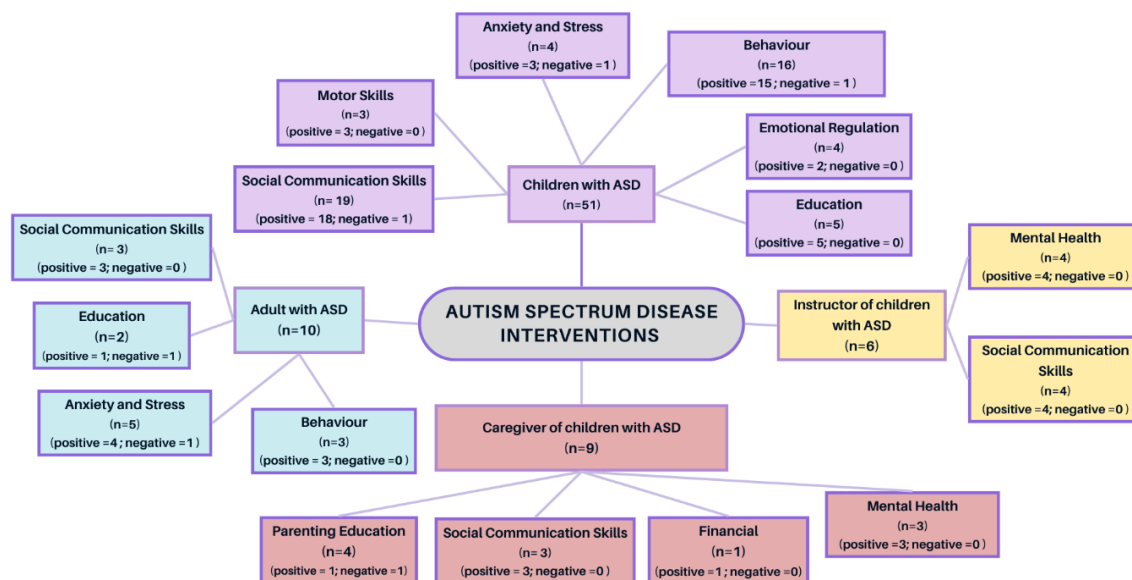
**Figure 1.** Systematic searching using PRISMA

## RESULTS AND DISCUSSION

The results are presented in Figure 2, categorized by target groups and specific areas of intervention focus. Some journals combine two target groups, such as Yoder et al. (2020), Leadbitter et al., (2022), Snijder et al., (2022), Holeva et al., (2022) and others. The intervention for particular target groups is categorised following *children with ASD*, *adults with ASD*, *caregivers (including sibling, family member or parent of children with ASD)*, and *instructors or teacher who teaching of children with ASD*. For each group, different types of interventions are outlined, by the total interventions conducted (n), as well as the outcome of the intervention known as positive (+) and negative (−) outcomes.

Children with ASD have the most varied interventions across multiple areas such as *anxiety and stress*, *behaviour*, *motor skills*, *emotional regulation*, and *education*. *Most intervention targeting social communication skill and behaviour as both symptoms are the main characteristic of children with autism. Meanwhile the motor skill of children with autism has been widely promoting the intervention.* Conversely, other areas like *emotional regulation* show a mixed response with a notable number of negative outcomes, indicating areas where interventions may need improvement or adjustment.

Meanwhile target group among adult who suffer for ASD has some focused intervention on *Social Communication Skills*, *Education*, and *Anxiety and Stress*. **caregivers of children with ASD** are provided with support in areas like *parenting education*, *social communication skills*, *financial*, and *mental health*. The interventions for caregivers seem aimed at empowering them to better support their children while also addressing their own needs. Two primary intervention categories mental instructors of children with mental health and social communication skills have been targeted to the instructor with ASD children.



**Figure 2.** Intervention target groups based on specific dimension

## CONCLUSION

This review demonstrated the need for further studies to address several issues including specific target participants and the effectiveness of each intervention towards each participant. Overall, this diagram underscores the importance of ASD interventions across a target participants, from those directly experiencing ASD to those involved in their care and education. The mix of positive and negative outcomes indicates that while many interventions show promise, there is still a need for continued research and refinement to optimize these interventions for each target group.

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