

REVIEW

## Harnessing Special Interests: A Strength-Based Framework for Enhancing Interventions in Autism Spectrum Disorder

### Aprovechamiento de los Intereses Especiales: Un Marco Basado en Fortalezas para Mejorar las Intervenciones en el Trastorno del Espectro Autista

Xueyan Jiang<sup>1</sup> , Syazwani Drani<sup>2</sup>  

<sup>1</sup>Universiti Sains Malaysia, School of Social Sciences. Penang, Malaysia.

**Cite as:** Jiang X, Drani S. Harnessing Special Interests: A Strength-Based Framework for Enhancing Interventions in Autism Spectrum Disorder. Health Leadership and Quality of Life. 2025; 4:928. <https://doi.org/10.56294/hl2025928>

**Submitted:** 21-05-2025

**Revised:** 28-07-2025

**Accepted:** 03-11-2025

**Published:** 04-11-2025

**Editor:** PhD. Neela Satheesh 

**Corresponding author:** Syazwani Drani 

#### ABSTRACT

**Introduction:** traditional interventions for children with autism spectrum disorders (ASD) focus primarily on correcting deficits, often ignoring the unique strengths and intrinsic motivation of the individual. One such underutilized strength is special interests, highly focused passions that are both common and unique among individuals with ASD. Emerging insights suggested that incorporating these special interests into intervention strategies can significantly enhance engagement, skill acquisition, and overall treatment outcomes.

**Method:** employed a theoretical construction method using literature review, inductive reasoning, and model development. It reviewed the relevant literature, and the findings were then distilled through an inductive process to develop a generalizable practical framework.

**Results:** a novel conceptual framework was proposed, repositioning SIs as foundational elements of intervention design. This framework outlined a five-stage process: (1) identification of special interests, (2) alignment of therapeutic goals with interests, (3) integration across multiple domains, (4) enhanced engagement and motivation, and (5) improved skill acquisition and emotional well-being. Furthermore, five practical application modules were presented: an integrated learning module, a peer-mediated module, a creative expression module, a technology-assisted module, and a family-centered module.

**Conclusions:** reframing special interests as therapeutic assets rather than barriers offered a promising direction for intervention. This framework suggested a move toward more individualized, empowering, and effective interventions for individuals with ASD.

**Keywords:** Autism Spectrum Disorder; Special Interest; Strength-Based Model; Intervention Framework; Therapeutic Asset.

#### RESUMEN

**Introducción:** las intervenciones tradicionales para niños con trastornos del espectro autista (TEA) se centran principalmente en corregir déficits, ignorando a menudo las fortalezas únicas y la motivación intrínseca del individuo. Una de esas fortalezas subutilizadas son los intereses especiales, pasiones altamente enfocadas que son comunes y únicas entre los individuos con TEA. Perspectivas emergentes sugieren que incorporar estos intereses especiales en las estrategias de intervención puede mejorar significativamente la participación, la adquisición de habilidades y los resultados generales del tratamiento.

**Método:** se empleó un método de construcción teórica utilizando revisión de la literatura, razonamiento inductivo y desarrollo de modelos. Se revisó la literatura pertinente y los hallazgos se destilaron luego a través de un proceso inductivo para desarrollar un marco práctico generalizable.

**Resultados:** se propuso un marco conceptual novedoso, reposicionando los intereses especiales (IE) como elementos fundamentales del diseño de la intervención. Este marco describió un proceso de cinco etapas: (1) identificación de intereses especiales, (2) alineación de los objetivos terapéuticos con los intereses, (3) integración en múltiples dominios, (4) mejora de la participación y la motivación, y (5) mejora de la adquisición de habilidades y el bienestar emocional. Además, se presentaron cinco módulos de aplicación práctica: un módulo de aprendizaje integrado, un módulo mediado por pares, un módulo de expresión creativa, un módulo asistido por tecnología y un módulo centrado en la familia.

**Conclusiones:** reencuadrar los intereses especiales como activos terapéuticos en lugar de barreras ofrece una dirección prometedora para la intervención. Este marco sugiere un movimiento hacia intervenciones más individualizadas, empoderadoras y efectivas para individuos con TEA.

**Palabras clave:** Trastorno del Espectro Autista; Interés Especial; Modelo Basado en Fortalezas; Marco de Intervención; Activo Terapéutico.

## INTRODUCTION

Autism Spectrum Disorder (ASD) is a lifelong neurodevelopmental condition. The Centers for Disease Control and Prevention (CDC) in the United States has released the latest prevalence data: 1 in 36 8-year-olds has autism spectrum disorder.<sup>(1)</sup> The prevalence rate has increased nearly fourfold over the past 20 years, compared to 0,67 % in 2000. Given the unprecedented number of people diagnosed with ASD and the higher mental health risks they face compared to their peers, the development of interventions and methods to support and promote the well-being of people with ASD is a matter of critical importance.

Since researchers first discovered autism, descriptions have been filled with deficit narratives. Researchers and others use terms like ‘disorder,’ ‘deficit,’ ‘impairment,’ and ‘dysfunction’ to describe autism-related conditions. This way of describing autism focused solely on the perceived deficiencies of autistic individuals, overlooking their capabilities and emphasizing what they cannot do.<sup>(2)</sup> This is supported by Burnham Riosa et al.<sup>(3)</sup> who randomly selected 1 154 ASD research articles and found 431 of them focused on the well-being of individuals with ASD. Out of these, 50,3 % of these were dominated by the deficit perspective, 11 % focused on the strength perspective, and the remaining 38,3 % were mixed perspectives (focusing on both deficit remediation and strengths enhancement). Although individuals with ASD may encounter difficulties and need support, interventions are almost entirely focused on correcting impairments, which can inadvertently demean and insult autistic individuals,<sup>(4)</sup> leading to negative experiences.<sup>(5)</sup> It can be seen that current ASD research is still dominated by the deficit model, and more attention needs to be paid to the strengths perspective in order to fully understand the well-being and potential of patients.

To date, the strengths of individuals with ASD have been described in three contexts. The first is abilities associated with specific cognitive styles,<sup>(6,7)</sup> followed by skills related to SIs,<sup>(8)</sup> and positive aspects associated with personality and character.<sup>(9,10)</sup> In this research, the researcher focused on the strengths associated with SIs in people with ASD strong and often focused enthusiasm and expertise in specific areas.

The DSM-5 listed ‘restricted, repetitive patterns of behavior, interests, or activities’ as one of the core diagnostic criteria for ASD.<sup>(11)</sup> Restricted interest (RI) in individuals with ASD is often described as a deficit, because the interest may become an obsession and limit other activities.<sup>(12)</sup> RI is perceived as ‘abnormal’ or ‘stereotypical,’ with words such as ‘rigid’ and ‘obsessive’ with distinctly negative connotations. RI is one of many names for this type of behavior. Other names include Special Interest, Intense Interest, Obsession, Special Fascination, Fixation, Qualified Interest, Qualified Subject, Repetition, and Narrow Interest.<sup>(13)</sup> The term ‘special interests’ (SIs) is used in this research because it is recognized as promoting a strength-based approach and is commonly used by individuals with ASD.

In 1944, Hans Asperger first noted that his patients had unusual interests, noting that ‘special interests enable them to achieve extraordinary levels of performance in certain areas’.<sup>(14)</sup> It is estimated that as many as 90 % of people with Asperger’s syndrome have SIs.<sup>(15)</sup> In Kirchner’s study,<sup>(16)</sup> participants reported spending an average of 26 hours per week on SIs and perceived their average proficiency as good, suggesting that they were strongly motivated by SIs. Winter-Messiers observed that when children and adolescents engaged in SIs, their deficits were reduced, related to language, social communication, emotions, sensory, and fine motor skills.<sup>(13)</sup> The participants showed increasing levels of language when talking about their SIs, and body language also improved, with increased eye contact and gestures, recognition of subtle social cues from peers, and a decrease in self-stimulatory and distracting behaviors.

The findings of Patten Koenig and Hough Williams supported strength-based views of special interests, with the majority of participants explicitly stating that their areas of interest were positive and beneficial.<sup>(17)</sup> Adults with ASD viewed their past and present preferred interests as strengths and interests that should

be encouraged, and strongly believed that children should be encouraged to develop SIs that will promote positive outcomes in their lives.<sup>(17)</sup> This view is also supported by the study of Grove et al., which analyzed the motivations of individuals with ASD for their SIs.<sup>(18)</sup> They found that individuals with ASD showed higher levels of intrinsic interest, knowledge, engagement, and action, suggesting that individuals with ASD are more intrinsically motivated by their SIs compared to neurologically normal individuals.

While it is recognized that there are recognized traditional deficits in individuals with ASD, proponents of the strength-based approach argued that it allowed for a more balanced and inclusive understanding of the human experience and the ability to gather unique information. Strength-based approaches not only offer more therapeutic possibilities for patients but also improve treatment outcomes.<sup>(19)</sup> A growing number of contemporary treatments for ASD use a strength-based approach<sup>(20,21)</sup> that fundamentally recognizes that individuals with ASD have many strengths and seeks to leverage their interests and abilities to develop their skills.<sup>(22)</sup> Strength-based interventions focusing on strengths and interests have been used in many areas for individuals with ASD, such as career exploration and aspirations,<sup>(23)</sup> incorporation into classroom practices,<sup>(24)</sup> social behaviors toward peers,<sup>(25)</sup> and reduction of anxiety for individuals with ASD,<sup>(26)</sup> strengthening their skills, and promoting social engagement.<sup>(27)</sup>

While many interventions claimed to be strength-based, there is no requirement for interventions to meet minimum standards to be considered strength-based. This research explored the benefits of strength-based interventions centered on children's SIs, analyzed and summarized existing knowledge about strength-based intervention related to SIs, and synthesized the evidence supporting a strength-based approach. It was intended to provide new insights, fill gaps, and advance current understanding. The authors then presented a novel framework in which SIs act as motivational pathways to achieve social, relationship, communication, and academic goals. By reframing SIs as therapeutic assets rather than barriers, this approach offered a promising direction for more individualized, empowering, and effective interventions for children with ASD.

## METHOD

This research constructed an innovative intervention model by integrating theoretical insights and practical strategies from multiple research areas, including ASD, SIs, and strength-based approaches. The difference between conceptual papers and empirical research lies in the fact that the former does not rely on the collection of original data but instead advances understanding through theoretical integration, framework development, and the generation of new hypotheses or models.

This research adopted a theoretical construction method based on literature review, inductive reasoning, and model development. Literature searches were based on databases such as PsycINFO, Web of Science, and Scopus. The keywords were 'ASD,' 'special interest,' and 'strength-based intervention.' The studies included were published between 2000 and 2024 and selected according to the relevance for the conceptual development of a framework based on strength that includes SIs.

The development process began with extracting practical strategies and observing the benefits of strength-based interventions, with the major literature sources<sup>(13,28,29,30)</sup> being comprehensively analyzed to determine patterns of strength-based practices. Through an inductive process, these findings were distilled and organized into a generalizable framework, repositioning SIs from being seen as marginal motivational factors to core ones. The framework integrated interdisciplinary perspectives and proposed five modules for application in interventions. These modules are designed to be flexible and adaptable to different environments.

## RESULTS

### Interventions using special interests

In the community, a study of strength-based program that was designed to support young people with ASD in developing interests and skills in science, technology, engineering, arts, and mathematics (STEAM) highlighted the positive impact of these programs on the health and well-being of young people with ASD, social relationships and interactions, self-confidence and self-esteem, sense of belonging, and activity and engagement.<sup>(27)</sup> Additionally, engaging in work related to their SIs improves mental health and reduces levels of depression in adults with ASD.<sup>(31)</sup> Grove et al. found that engagement in SIs was associated with higher levels of subjective well-being.<sup>(32)</sup>

Regarding the academic skills of adults with ASD, Gillespie-Lynch et al. conducted a study comparing the writing skills of autistic and allistic college students, using a prompt that asked them to write about a topic of interest to them, and it was found that the autistic participants demonstrated higher writing skills than the allistic group.<sup>(33)</sup> In summary, SIs are considered to be a source of strength and motivation for individuals with ASD and can be used in all aspects of their lives, including daily living, socialization, mental health, and academics.

LEGO therapy and Power Cards are also seen as strength-based interventions that utilize SIs. LEGO therapy is a social skills intervention designed to develop children's strengths and interests in a natural environment.

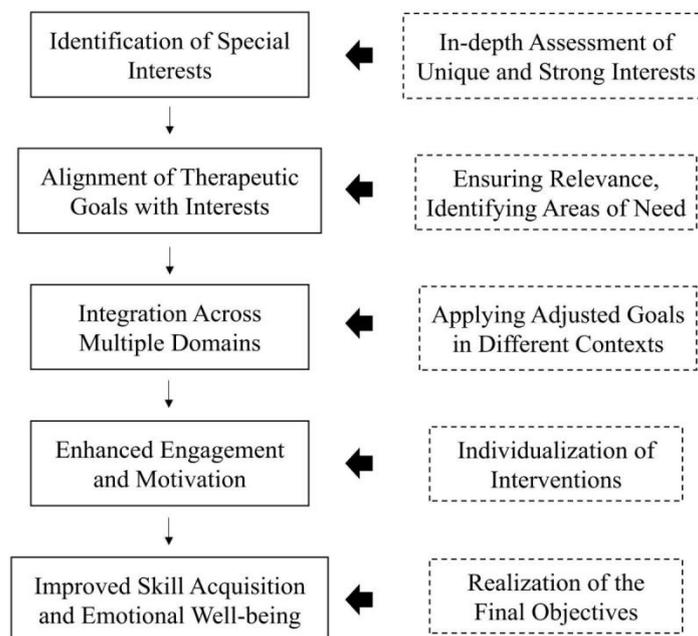
A scoping review of LEGO play therapy for children with ASD reported positive effects on social skills, building friendships, family relationships, coping strategies, and social interactions.<sup>(34)</sup> The Power Cards strategy is based on the concept of social story program motivated by the children’s SIs, and teaches social skills through the incorporation of special interest items and activities into the intervention.<sup>(35)</sup>

Additionally, interventions with 3D design technology have been used and demonstrated. The program represents a shift from a deficit-based biomedical approach to ASD. It builds on a positive youth development framework that builds on the strengths and interests of youth with autism and builds bridges of communication through shared interests to promote career exploration, software skill development, and social engagement,<sup>(23)</sup> which is facilitated by social engagement around technology and peer support in focus groups.<sup>(36)</sup>

**Strength-based model**

Special interests provide inherent strengths. When people no longer regard these restricted interests as deficiencies that need to be changed, and instead recognize them as assets to be included in our interventions as needed, unexpected benefits emerge. Therefore, psychologists, special education teachers, and social workers should acknowledge and include the unique interests of autistic children, adolescents, and adults in their professional practices. In strength-based intervention, it entails identifying strong interests and variables that are beneficial to children with ASD and recognizing the importance of different backgrounds, personal strengths, and abilities in people’s lives. By emphasizing the abilities and strengths of children with ASD, people can avoid using language that views ASD as a deficit that needs to be corrected.

The concept analysis does not include the collection of empirical data but lays the foundations for future applied research and project development. Based on the strength-oriented paradigm and the increasing awareness of the motivating power of SIs for individuals with ASD, this research proposed a framework for intervention design (see figure 1). The framework served as both a conceptual map and a practical guide to support personalized, motivated, and empowered interventions for children with ASD, helping practitioners and researchers visualize the paths of application of interest-based interventions. The core of the framework is the systematic identification, integration, and usage of SIs as foundational elements of treatment planning and implementation. Rather than viewing SIs as ancillary motivators or distractions from core goals, the framework conceptualizes them as essential means for engagement, skill development, and emotional support.



**Figure 1.** Framework for strength-based intervention design

Within this framework, the first step is to thoroughly evaluate SIs. This covers not only choosing activities or subjects that capture children’s attention but also knowing the depth, context, and emotional significance of these interests. Assessment tools may include interest questionnaires, interest lists, structured interviews with parents or guardians, direct observation, and self-reports adapted to the developmental level of the children.

The second stage is deliberately matching the participants’ SIs with the therapy objectives and determining the particular areas of need. The participants’ needs can be behavioral, academic, social, or emotional. Then the treatment goals need to be combined with the interest rather than being considered as a component.

Making sure the plan itself naturally incorporates interest will boost drive. For example, if the child shows a keen interest in trains, then social communication goals can be incorporated into role-playing scenarios with train attendants and passengers. Likewise, academic tasks such as math or literacy can be taught through train themes, which keeps high degrees of intrinsic motivation and engagement.

The third phase emphasizes the dynamic integration of SIs across multiple intervention domains. SIs can serve a variety of purposes, including but not limited to academic or communicative objectives, emotional management, social interactions, and skills necessary for everyday life. For example, social skills groups can be set up around shared interests to promote natural peer relationships, while emotional distress can be coped with through the comforting and stabilizing effects of engaging in favorite topics in this group. Figure 2 shows the mechanism of how SIs connect intervention goals.

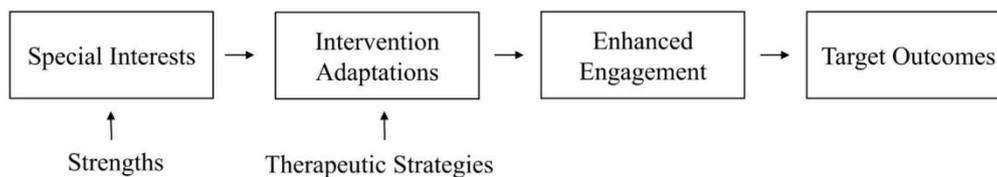


Figure 2. Mechanisms of strength-based intervention

### Proposed modules

The researchers proposed modules for applications in different domains:

#### *Integrated Learning Module*

Integrating children's SIs into educational content to enhance academic engagement and understanding. SIs are identified through observation, interviews, or interest lists, and lesson plans are developed that incorporate those interests. SIs can be integrated into all core academic areas, including English, reading, writing, spelling, math, science, speech, and history.<sup>(13)</sup> For example, if a child is interested in butterflies, a writing task could involve a story about butterflies, and a math problem could calculate the distance a butterfly flies. Integrating SIs into academic tasks places greater emphasis on the learning process rather than on achieving specified learning outcomes.<sup>(37)</sup>

By aligning the teaching content with the areas of natural inclination of students, educators can create a more personalized and inclusive learning environment. The challenge for educators lies in how to best tap into students' passion for SIs. Educators can develop a SIs map, which is a one to two page overview that presents students' SIs in a chart format and connects them to curriculum areas. Information about children's autism is also placed on the map, highlighting sensory issues, priority goals, strengths, and motivations.<sup>(28)</sup>

#### *Peer-Mediated Module*

Peer-mediated interventions have been shown to be effective in improving a variety of social skills, including initiating interactions, joint attention, sharing, and communication.<sup>(38)</sup> Peer-mediated module should utilize the motivational force of SIs to enhance social engagement and interpersonal relationship development in children with ASD. Activity design should focus on group interests rather than individual interests to facilitate more natural social engagement.

When creating groups of children with similar interests, design cooperative tasks that require communication, turn-taking, and joint problem-solving, such as building models or playing games. Each participant should be assigned specific roles, and they should be encouraged to co-design research and serve as program evaluators, not just as passive recipients of services. Peers should be the main drivers of group activities, including explaining rules and organizing activities.<sup>(39)</sup> Children with ASD may be experts in their SIs areas, which can encourage their participation and sense of responsibility.

#### *Creative Expression Module*

Creative expression includes activities such as music, yoga, martial arts, theater, and dance,<sup>(40)</sup> which can provide alternative pathways for emotional expression and processing. The choice of creative expression methods should ultimately depend on the preferences of the individual with ASD or their family. Clinicians should select methods that the client is most interested in and willing to implement.<sup>(40)</sup> If the individual has a particular interest in music, movement imitation, body rhythm, story characters, role-playing, or dramatic scenarios, this module is appropriate.

Incorporating a favorite theme or subject of the child or adolescent with ASD into a creative project that allows the child to express thoughts and feelings through a medium of their choosing. For example, Quintin pointed out that music is often a relative strength for individuals with ASD.<sup>(41)</sup> Individual preferences for music

styles, artists, or instruments should be incorporated into music therapy sessions. Drama intervention allows children to express themselves by performing roles related to their interests. For instance, for a child who loves pandas, the child's play could be written about pandas rather than just using a theme arranged by the therapist. Unlike traditional creative therapy models that are therapist-led and content-predefined, this module encourages co-construction of content based on the children's SIs.

#### *Technology-assisted Module*

This module integrates various digital technologies to cater to children's specific interests, including tablets, educational software, 3D modeling programs, and virtual and augmented reality (VR/AR). The strengths of visuospatial skills and interest in computers in children and adolescents with ASD should be fully explored, and technology should be used to create interactive, personalized experiences that match the children's interests. In this module, the researcher emphasized the importance of building technology-enhanced learning environments for children with ASD based on their feedback.<sup>(42)</sup>

Practitioners can incorporate children's interests into applications or software. For example, if participants are interested in math, it needs to visualize numerical facts, math procedures, and abstract shapes as 3D image objects, such as cube counting games, object division games, etc.<sup>(30)</sup> For participants interested in specific environments or themes (e.g., space, underwater ecosystems), immersive VR applications can simulate real-world scenarios, enhancing engagement, promoting social cognition, and facilitating sensory integration.

#### *Family-centered Module*

Families can integrate their children's SIs into daily life and interactions, creating a supportive family environment. Parents need to recognize the importance of SIs and how to combine them with learning and recreation. Practitioners provide materials and suggestions for interest-based activities that can be easily implemented at home. Parents are able to design home activities centered around their child's interests to promote parent-child relationships and skill development.

The key to this module lies in embracing the children's SIs and incorporating them into daily family life in creative ways. Parents can plan short trips or vacations centered around SIs. For example, taking the child to a farm supply store, car factory, or train museum can encourage two-way communication with family members for children interested in animals, cars, or trains. Additionally, parents can invite relatives or friends whose interests align with the children's SIs to participate in family activities focused on children's SIs.<sup>(37)</sup> Furthermore, family interventions should emphasize a two-way supportive relationship, not only with parents helping children but also through children's strengths to establish reciprocal interactions. Allowing children with ASD to teach family members how to use technology is an effective way to strengthen their confidence, sense of role, and social skills.<sup>(36)</sup>

## **DISCUSSION**

In studies about ASD, despite the widespread recognition of the existence of recognized traditional deficits in individuals with ASD, researchers have discovered strength-based patterns. For each of the recognized deficits, including verbal and nonverbal, social communication, emotional, sensory, and fine motor skills, the strength-based model of special interests has been shown to positively parallel the traditional deficit model.<sup>(13)</sup> This research argued that the systematic incorporation of SIs into strength-based interventions can improve effectiveness by increasing motivation and engagement.

As described in the literature review, when participants talked about their SIs, their verbal and nonverbal skills improved, enabling positive outcomes in academics, socialization, mental health, or group activities. Active and purposeful participation in interest-based activities can help individuals increase their self-confidence, improve their abilities, enhance their connections with others, help children develop a positive self-identity, alleviate anxiety caused by daily activities, and provide a platform for positive interactions with peers and others, as well as facilitate their participation in family activities and community groups. When they are sufficiently motivated, they are more likely to experience well-being.

Strength-based programs provide a safe, supportive environment for individuals with ASD, which includes activities tailored to strengths and interests that allow individuals to focus on their preferred interests. It can be a great motivator as a way to help them feel accepted and more confident, boost their self-esteem, make them feel more comfortable, and connect with those around them,<sup>(17,43)</sup> ultimately helping them to realize their potential.<sup>(12)</sup> It is easy to see how SIs can be a great reinforcement point while being combined with different interventions. By reconceptualizing SIs as valuable tools rather than clinical symptoms that need to be fixed, this approach aims to shift the narrative around autism interventions to one that is more affirming, engaging, and ultimately more effective.

The conceptual framework proposed in this research challenged the entrenched deficit-based paradigm by repositioning SIs as central to intervention for ASD. Instead of just using SIs as simple rewards in traditional

approaches (e.g., letting someone watch a cartoon for finishing a task), this framework makes those interests a key part of the intervention goals, which means that practitioners need to change their roles in three ways: from goal-setter to interest interpreter, from skill trainer to contextual architect, and from authoritative evaluator to growth collaborator.

This framework does not discard clinical goals but reconstructs them. For example, instead of just discussing anime or rewarding watching anime, a therapist might use role-playing scenarios based on the individual's favorite anime characters. This makes the exercise more engaging. The framework mitigates traditional power imbalances by centering the voice of the person with ASD in goal setting. Specifically, clinicians take on the role of 'collaborator' rather than 'authority.' In practice, however, practitioners need to be wary of over-idealizing the autonomy of the individual in order to avoid setting excessive or idealized goals.

For practitioners, it is important to think about how to identify and incorporate SIs, how to combine SIs with goals to design appropriate interventions, and how to transfer skills learned through strong interests to the broader context. There should be ongoing reflection on better application of strength-based intervention frameworks in practice, such as continually refining interest lists so that children and parents recognize the universality and power of SIs. Relevant training for practitioners should also be enhanced. It is also important for researchers to recognize that SIs cannot be overly relied upon, that the actual difficulties and risks faced by children and adolescents with ASD cannot be denied, and that over-reliance on a single interest leading to cognitive narrowing can be balanced by exposure to new interests.

There is a lack of large-scale empirical research on strength-based interventions. For future research, empirical evidence should also be given on the effectiveness of the strength-based approach, by comparing randomized controlled trial studies of strength-based and deficit-based approaches. Due to the heterogeneity of ASD, there are also no programs that can be agreed upon for use, and the framework needs to be continually refined in practice.

## CONCLUSION

While there is emerging evidence to support the use of strength-based interventions with individuals with ASD, these approaches are still relatively new and have limited dissemination. Further research is needed on operational guidelines for strength-based interventions, fidelity metrics, and cultural differences in strength-based interventions utilizing interests. The framework of this research is more than an intervention model. It is a manifesto for redefining intervention for ASD. By viewing SIs as foundational rather than complementary means, it challenges the system to evolve from 'how to reduce ASD' to 'how to support the flourishing of individuals with ASD.' The research concludes with a call for a shift in research on ASD from making up for a deficiency to a strength-based model of practice, which has important implications for practitioners, policymakers, and future evidence-based work. It is reasonable to expect a more inclusive and effective autism support ecology.

## REFERENCES

1. Maenner MJ, Warren Z, Williams AR, Amoakohene E, Bakian AV, Bilder DA, et al. Prevalence and characteristics of autism spectrum disorder among children aged 8 years—Autism and Developmental Disabilities Monitoring Network, 11 sites, United States, 2020. *MMWR Surveill Summ.* 2023;72(2):1-14. <https://doi.org/10.15585/mmwr.ss7202a1>
2. Pellicano E, den Houting J. Annual Research Review: Shifting from 'normal science' to neurodiversity in autism science. *J Child Psychol Psychiatry.* 2022;63(4):381-96. <https://doi.org/10.1111/jcpp.13534>
3. Burnham Riosa P, Chan V, Maughan A, Stables V, Albaum C, Weiss JA. Remediating deficits or increasing strengths in autism spectrum disorder research: A content analysis. *Adv Neurodev Disord.* 2017;1(3):113-21. <https://doi.org/10.1007/s41252-017-0027-3>
4. Pellicano E, Stears M. Bridging autism, science and society: Moving toward an ethically informed approach to autism research. *Autism Res.* 2011;4(4):271-82. <https://doi.org/10.1002/aur.201>
5. den Houting J, Botha M, Cage E, Jones DR, Kim SY. Shifting stigma about autistic young people. *Lancet Child Adolesc Health.* 2021;5(12):839-41. [https://doi.org/10.1016/S2352-4642\(21\)00309-6](https://doi.org/10.1016/S2352-4642(21)00309-6)
6. Bal VH, Wilkinson E, Fok M. Cognitive profiles of children with autism spectrum disorder with parent-reported extraordinary talents and personal strengths. *Autism.* 2021;26(1):62-74. <https://doi.org/10.1177/13623613211020618>
7. Dawson M, Soulières I, Gernsbacher MA, Mottron L. The level and nature of autistic intelligence. *Psychol*

Sci. 2007;18(8):657-62. <https://doi.org/10.1111/j.1467-9280.2007.01954.x>

8. Kirchner JC, Dziobek I. Towards successful employment of adults with autism: A first analysis of special interests and factors deemed important for vocational performance. *Scand J Child Adolesc Psychiatr Psychol*. 2014;2(2):77-85. <https://doi.org/10.21307/sjcapp-2014-011>

9. Kirchner J, Ruch W, Dziobek I. Brief report: Character strengths in adults with autism spectrum disorder without intellectual impairment. *J Autism Dev Disord*. 2016;46(10):3330-7. <https://doi.org/10.1007/s10803-016-2865-7>

10. Wilkinson E, Vo LTV, London Z, Wilson S, Bal VH. Parent-reported strengths and positive qualities of adolescents and adults with autism spectrum disorder and/or intellectual disability. *J Autism Dev Disord*. 2022;52(12):5471-82. <https://doi.org/10.1007/s10803-021-05405-x>

11. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Arlington (VA): American Psychiatric Publishing; 2013.

12. Jones M, Falkmer M, Milbourn B, Tan T, Sheehy L, Bölte S, et al. A strength-based program for adolescents with autism. 2018. Available from: <https://bcec.edu.au/assets/A-strength-based-program-for-adolescents-with-autism.pdf>

13. Winter-Messiers MA. From tarantulas to toilet brushes. *Remedial Spec Educ*. 2007;28(3):140-52. <https://doi.org/10.1177/07419325070280030301>

14. Asperger H. Die „Autistischen Psychopathen“ im Kindesalter. *Arch Psychiatr Nervenkr*. 1944;117(1):76-136.

15. Nowell KP, Bernardin CJ, Brown C, Kanne S. Characterization of special interests in autism spectrum disorder: A brief review and pilot study using the Special Interests Survey. *J Autism Dev Disord*. 2021;51(8):2711-24. <https://doi.org/10.1007/s10803-020-04743-6>

16. Kirchner J. Towards a resource-oriented approach in autism research: Strengths related to personality and special interests in high-functioning individuals on the autism-spectrum [dissertation]. 2017. <http://dx.doi.org/10.17169/refubium-13820>

17. Patten Koenig K, Hough Williams L. Characterization and utilization of preferred interests: A survey of adults on the autism spectrum. *Occup Ther Ment Health*. 2017;33(2):129-40. <https://doi.org/10.1080/0164212X.2016.1248877>

18. Grove R, Roth I, Hoekstra RA. The motivation for special interests in individuals with autism and controls: Development and validation of the Special Interest Motivation Scale. *Autism Res*. 2016;9(6):677-88. <https://doi.org/10.1002/aur.1560>

19. Rashid T. Positive psychotherapy: A strength-based approach. *J Posit Psychol*. 2015;10(1):25-40. <https://doi.org/10.1080/17439760.2014.920411>

20. Huntley K, Black M, Jones M, Falkmer M, Lee E, Tan T, et al. Action briefing: Strengths-based approaches. Perth (AU): Curtin University; KIND; Autistica; 2019. Available from: <https://www.autistica.org.uk/downloads/files/FINAL-Strengths-Based-Approaches-ActionBriefing.pdf>

21. Urbanowicz A, Nicolaidis C, den Houting J, Shore SM, Gaudion K, Girdler S, et al. An expert discussion on strengths-based approaches in autism. *Autism Adulthood*. 2019;1(2):82-9. <https://doi.org/10.1089/aut.2019.29002.aju>

22. Jones M, Falkmer M, Milbourn B, Tan T, Sven B, Girdler S. Identifying the essential components of strength-based technology clubs for adolescents with autism spectrum disorder. *Dev Neurorehabil*. 2021;24(5):323-36. <https://doi.org/10.1080/17518423.2021.1886192>

23. Diener ML, Wright CA, Wright SD, Anderson LL. Tapping into technical talent: Using technology to

facilitate personal, social, and vocational skills in youth with autism spectrum disorder (ASD). In: Cardon TA, editor. *Technology and the treatment of children with autism spectrum disorder*. Cham: Springer International Publishing; 2016. p. 97-112. [https://doi.org/10.1007/978-3-319-20872-5\\_9](https://doi.org/10.1007/978-3-319-20872-5_9)

24. Gunn KCM, Delafield-Butt JT. Teaching children with autism spectrum disorder with restricted interests: A review of evidence for best practice. *Rev Educ Res*. 2016;86(2):408-30. <https://doi.org/10.3102/0034654315604027>

25. Koegel RL, Fredeen R, Kim S, Danial J, Rubinstein D, Koegel L. Using perseverative interests to improve interactions between adolescents with autism and their typical peers in school settings. *J Posit Behav Interv*. 2012;14(3):133-41. <https://doi.org/10.1177/1098300712437043>

26. Kaboski JR, Diehl JJ, Beriont J, Crowell CR, Villano M, Wier K, et al. Brief report: A pilot summer robotics camp to reduce social anxiety and improve social/vocational skills in adolescents with ASD. *J Autism Dev Disord*. 2015;45(12):3862-9. <https://doi.org/10.1007/s10803-014-2153-3>

27. Lee EAL, Scott M, Black MH, D'Arcy E, Tan T, Sheehy L, et al. "He sees his autism as a strength, not a deficit now": A repeated cross-sectional study investigating the impact of strengths-based programs on autistic adolescents. *J Autism Dev Disord*. 2024;54(5):1656-71. <https://doi.org/10.1007/s10803-022-05881-9>

28. Davey L. Using the special interests of autistic children to facilitate meaningful engagement and learning. *Good Autism Pract (GAP)*. 2020;21(1):43-64. <https://www.ingentaconnect.com/content/bild/gap/2020/00000021/00000001/art00007>

29. Ryder G, Brownlow C. Exploring leisure, hobbies and special interests: The constructive role of special interests for children with ASD. In: O'Dell L, Brownlow C, Bertilsdotter Rosqvist H, editors. *Different childhoods: Non/normative development and transgressive trajectories*. London: Routledge; 2018. p. 9-24. <https://www.taylorfrancis.com/books/e/9781317226093>

30. Suparjoh S, Shahbodin F, Mohd CKNCK, editors. *The potential of augmented reality to support the interest-based learning of children with autism spectrum disorder (ASD)*. In: 3rd International Conference on Special Education (ICSE 2019). Paris: Atlantis Press; 2019.

31. Bross LA, Huffman JM, Hagiwara M. Examining the special interest areas of autistic adults with a focus on their employment and mental health outcomes. *J Vocat Rehabil*. 2022;57(3):289-305. <https://doi.org/10.3233/JVR-221218>

32. Grove R, Hoekstra RA, Wierda M, Begeer S. Special interests and subjective wellbeing in autistic adults. *Autism Res*. 2018;11(5):766-75. <https://doi.org/10.1002/aur.1931>

33. Gillespie-Lynch K, Hotez E, Zajic M, Riccio A, DeNigris D, Kofner B, et al. Comparing the writing skills of autistic and nonautistic university students: A collaboration with autistic university students. *Autism*. 2020;24(7):1898-912. <https://doi.org/10.1177/1362361320929453>

34. Lindsay S, Hounsell KG, Cassiani C. A scoping review of the role of LEGO® therapy for improving inclusion and social skills among children and youth with autism. *Disabil Health J*. 2017;10(2):173-82. <https://doi.org/10.1016/j.dhjo.2016.10.010>

35. Gagnon E. *Power cards: Using special interests to motivate children and youth with Asperger syndrome and autism*. Shawnee Mission (KS): AAPC Publishing; 2001.

36. Wright SD, D'Astous V, Wright CA, Diener ML. Grandparents of grandchildren with autism spectrum disorders (ASD): Strengthening relationships through technology activities. *Int J Aging Hum Dev*. 2012;75(2):169-84. <https://doi.org/10.2190/AG.75.2.D>

37. Winter-Messiers MA, Herr CM, Wood CE, Brooks AP, Gates MAM, Houston TL, et al. How far can Brian ride the Daylight 4449 Express? A strength-based model of Asperger syndrome based on special interest areas. *Focus Autism Other Dev Disabil*. 2007;22(2):67-79. <https://doi.org/10.1177/10883576070220020701>

38. Chan JM, Lang R, Rispoli M, O'Reilly M, Sigafoos J, Cole H. Use of peer-mediated interventions in the treatment of autism spectrum disorders: A systematic review. *Res Autism Spectr Disord*. 2009;3(4):876-89. <https://doi.org/10.1016/j.rasd.2009.04.003>

39. Koegel R, Kim S, Koegel L, Schwartzman B. Improving socialization for high school students with ASD by using their preferred interests. *J Autism Dev Disord*. 2013;43(9):2121-34. <https://doi.org/10.1007/s10803-013-1765-3>

40. Amonkar N, Su WC, Bhat AN, Srinivasan SM. Effects of creative movement therapies on social communication, behavioral-affective, sensorimotor, cognitive, and functional participation skills of individuals with autism spectrum disorder: A systematic review. *Front Psychiatry*. 2021;12:722874. <https://doi.org/10.3389/fpsy.2021.722874>

41. Quintin EM. Music-evoked reward and emotion: Relative strengths and response to intervention of people with ASD. *Front Neural Circuits*. 2019;13:49. <https://doi.org/10.3389/fncir.2019.00049>

42. Voutilainen M, Vellonen V, Kärnä E. Establishing a strength-based technology-enhanced learning environment with and for children with autism. In: Bastiaens T, Ebner M, editors. *EdMedia 2011*. Lisbon (Portugal): Association for the Advancement of Computing in Education (AACE); 2011. p. 601-6. <https://www.learntechlib.org/p/37929>

43. Kryzak LA, Jones EA. The effect of prompts within embedded circumscribed interests to teach initiating joint attention in children with autism spectrum disorders. *J Dev Phys Disabil*. 2015;27(3):265-84. <https://doi.org/10.1007/s10882-014-9414-0>

#### **FINANCING**

The authors did not receive financing for the development of this research.

#### **CONFLICT OF INTEREST**

The authors declare that there is no conflict of interest.

#### **AUTHORSHIP CONTRIBUTION**

*Conceptualization:* Xueyan Jiang.

*Data curation:* Xueyan Jiang.

*Formal analysis:* Xueyan Jiang.

*Methodology:* Xueyan Jiang, Syazwani Drani.

*Project management:* Xueyan Jiang, Syazwani Drani.

*Software:* Xueyan Jiang, Syazwani Drani.

*Supervision:* Syazwani Drani.

*Validation:* Xueyan Jiang, Syazwani Drani.

*Display:* Xueyan Jiang.

*Drafting - original draft:* Xueyan Jiang.

*Writing - proofreading and editing:* Xueyan Jiang, Syazwani Drani.