

Review article

**Interventions for the improvement of social skills in Autism spectrum disorder in India:
A systematic review**

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Abstract

Background: The increasing prevalence of Autism Spectrum Disorders (ASD) in India is in a gaping contrast with the existing interventions in India. Though several interventions have proved their efficiency in foreign countries, such studies within India are scarce.

Aims: This review attempts to systematically examine the different intervention practices that include improvement of social skills in ASD that is practiced in India as revealed through published literature on the same.

Methods: Studies published from 2000 to 2020 were selected for the study. Evidence is presented for nine treatment categories: Behavior-based interventions, Developmental Interventions, TEACHH approach, Parent-mediated Interventions, speech-based Interventions, electronics-based interventions, augmentative and alternative communication, play-based interventions and Yoga-based interventions. These studies were drawn from databases Ebsco, Proquest, PubMed, MEDLINE, science direct and Google Scholar. Though a definitive conclusion cannot be drawn without a meta-analysis, the available evidence is gathered and evaluated in the present review.

Results: The review has proved to be a reliable summary of the interventions that include improvement of social skills in ASD that is practiced in India.

Conclusions: Parent-mediated interventions may be more appropriate for the resource-poor settings of India, when developmental interventions may be more appropriate for the resource-rich settings of India. The scarcity of published literature on the topic in India is also a significant factor that highlighted itself through the research.

Keywords: Autism spectrum Disorder, Intervention, Social skills

Introduction

Autism Spectrum Disorder (ASD) is a neuro-developmental disorder that affects two broad domains: persistent deficits in social communication and social interaction across multiple contexts, and restricted, repetitive patterns of behaviour, interests, or activities [1]. Recent studies suggest that the prevalence of ASD is on the rise [2, 3, 4, 5].

Major difficulties with social communication in ASD limit their functioning [1]. Deficits in social skills lead to behavioural disorders, poor academic performance, in-appropriate interpersonal relationships, educational and cognitive impairments, isolation, and psychological issues [6, 7, 8, 9]. Therefore it is important to learn in greater depth about the social skill difficulties of children with ASD, who have inherent difficulties with the acquisition and performance of social skills.

Several interventions have been devised to improve this domain of functioning. The Hanen approach equips parents to use strategies and the support required to help their children with ASD improve social communication, reciprocal interactions, play and imitation [10]. The 'building social relationships' model utilizes several strategies such as social stories, behaviour

rehearsal, self-monitoring, peer training strategies, relaxation techniques, video modelling, and improving social skills in an individual with ASD[11]. Another intervention follows the social skill improvement system rating scale developed by Gresham and Elliot, which can identify specific social behaviours, their acquisition and performance deficits. These are addressed with skill-building in school and home interventions [12].

However, studies show that social skills development has a high variability concerning participant, culture, setting and stimulation delivered [13, 14, 15]. Therefore, any therapy delivered to an individual with ASD should be evaluated within his/her individual context. This necessitates an evaluation of interventions which includes social skills that have been effective for ASD within the Indian context.

Studies suggest that perceived lack of resources, lack of awareness, socioeconomic status, cultural norms and stigma are major components affecting a parent's approach for intervention within the Indian context [16, 17, 18, 19, 20]. The varying kinds of difficulties experienced by parents of children with ASD heavily affect their maintenance strategies in India [21]. It is found that the quality of support received by parents significantly contributes to parental stress [22]. Studies suggest that family-centered strategies that accommodate parents' active participation in the intervention will help in the holistic development of the child with ASD and their family [23].

The present study aims to systematically examine the different intervention practices that include improving social skills in ASD, which is practiced in India as revealed through published literature on the same. This also aimed to evaluate the results and the pattern of existing scientific evidence available on the topic. Each study has been classified into a given category by the present review researchers based on the techniques used in the intervention conducted in the

study if it is not explicitly mentioned in the specific studies. The settings with inadequate resources/rich resources as described in the present study are with respect to the access to trained rehabilitation professionals and a requisite number of visits to the rehabilitation professional.

Method

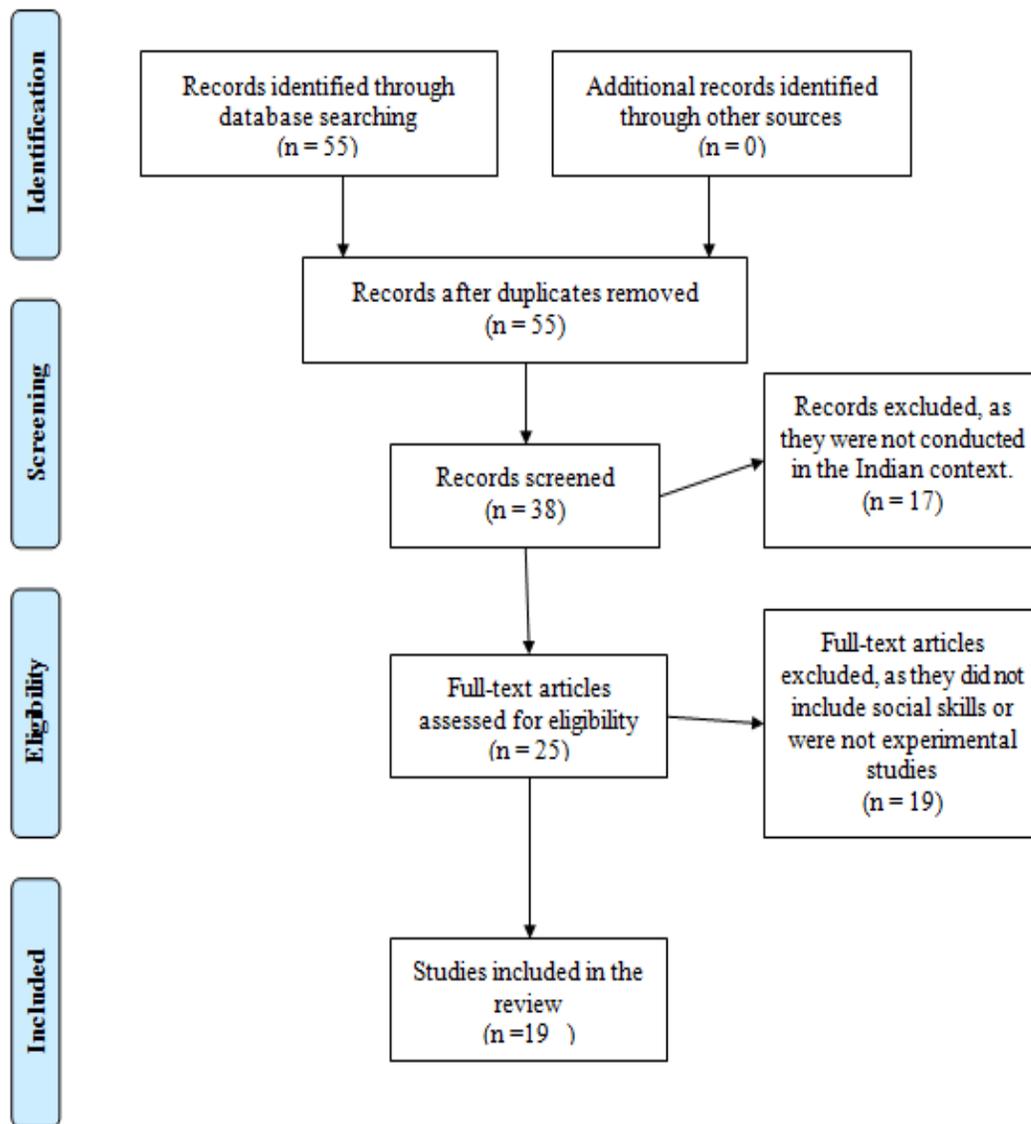
Search Strategy

An extensive search on Ebsco, Proquest, PubMed, MEDLINE, science direct and Google Scholar was carried out. Indian studies that included improving social skills in individuals with ASD were identified for the present review. The search was done using following subject headings and free-text terms: social skills training, Autism Spectrum Disorder, socialization, social skills, Social skills intervention in India, Intervention for Autism in India, Intervention for Autism in Schools in India. This search strategy was primarily used for Ebsco and then adapted for use in other databases. The authors completed the literature search within two years, starting from June 2018 to June 2020.

Study Selection

All the studies on Intervention for ASD that involved improving social skills were selected for the present study. Only those experimental studies conducted on the Indian population, between 2000 and 2020 were selected for the study. Interventions that primarily focused on dietary regulations or pharmacological interventions were excluded from the study. The PRISMA flowchart is shown in figure 1. Nineteen published studies on interventions for ASD that included social skills are selected for the study.

Figure-1: PRISMA Flowchart of the present study



Data extraction

The information extracted from the articles included the author, year of study, sample size, the age range of the sample, type of intervention carried out, the procedure of the intervention, duration and course of the intervention, and key findings. Data extraction was done by the authors independently, and discrepancies were sorted out through mutual discussion and consensus. A detailed list of all the studies included in the present study is given in Table 1

Data analysis

The data extracted were analyzed systematically. The results of a given intervention are matched with its methodology and objectives and analyzed objectively. The study has followed PRISMA guidelines in the reporting of the review.

Table-1: Details of the studies selected in the present review

Study	Sample size & Characteristics	Tools used	Intervention procedure & schedule	Key Outcomes
Developmental Interventions				
Karant, Shaista&Srikanth (2010) [33]	n=30 (2.2 to 5.5 years, 70% males)	CARS, ComDEALL Developmental Checklist	Multidisciplinary intervention team to facilitate overall development for at least 8 months (45 minutes duration)	Significant increase in social and other domains of development. Significant decrease in ASD symptoms.

Lal & Chabbria (2013) [34]	n=26 (3 to 6 years)	Behavioural scale for social skills	Specific activities to develop social and communication skills. 20 sessions (30 minute duration)	Significant improvement in interactive behavior with respect to social and other domains.
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Speech based interventions				
Paul et al (2015) [35]	n=3 (3 to 4 years, 100% males)	Observation method	Play activities such as block matching, picture matching and clay play, in sung and spoken conditions. (18 sessions that lasted for 3 months; 3 to 4 minutes duration)	Significant increase in socio-communicative responses.
TEACHH-based intervention				
Lal & Shahane (2011) [41]	n=12 (8 to 12 years)	Scale of Independent work skills	Work systems and visual structure 15 sessions (30 minutes duration)	Significant improvements on all skills focused.
AAC based interventions				
Ruhela & Parween (2018) [37]	n=5 (6 to 12 years; 100% males)	Researcher developed checklists	Visual communication activity schedule Three days a week, for one and a half months (30 minutes duration)	Significant improvements in communication skills and independent functioning for socialization

Lal (2010) [36]	n=8 (9 to 12 years)	LATCA & SBRS	Pointing and labeling activities 12 sessions (duration unavailable)	Significant improvements in social behavior, receptive language and expressive language.
Lal & Bali (2007) [38]	n=30 (5 to 11 years)	SCOMS	Matching and delivering objects on demand. 14 sessions (20-30 minutes duration)	Significant improvements in communication skills requisite for socialization.
Electronics based interventions				
Sankardas&Rajannahally (2017) [39]	n=20 (4 to 10 years)	AVAZ	The AVAZ app available in iPad was utilized. 3 days a week for 10 weeks (45 minutes duration)	Significant improvements in essential elements of socialization, .such as attention span and sitting tolerance.
Vadivel & Missal (2014) [40]	n=12 (3.5 to 6 years; 67% males)	CARS, ATEC & Auditory Integration device	The Adonnus electronic research technologies auditory integration device Twice daily for 10 days (30 minutes duration)	Significant improvements in sociability, speech/ language/ communication, sensory/ cognitive awareness and health/ physical/behavior domains.
Play based interventions				
Banerjee & Ray (2013) [42]	n=20 (60% males)	CARS, Portage, Problem Behaviour Checklist	Structured play therapy was given to develop each type of play in different stages. 10 sessions with 2 sessions per week for each	Significant improvements in socialization, communication, cognition and problem behaviours

			stage. (30-40 minutes duration)	
Gupta (2015) [43]	n=1(5.3 years)	CARS, VSMS, DPCL, PIP, Test of Theory of mind	Semi-structured intervention with flash cards, which depicted themes, based on real life situations. 3 days a week for 8 months (45 minutes duration)	Significant improvements in social communication skills, cognition, language, play, adaptive functioning and reduction in severity of disorder
Yoga based interventions				
Radhakrishna (2010) [44]	n=6 (8 to 14 years, 83% males)	Researcher developed rating scale	Improving imitation skills to improve gross motor actions, vocalization, complex imitations and oral facial movements. 5 times a week for 10 months. (45 minutes duration)	Significant improvements in play skills and imitation skills which are essential social skills.
Radhakrishna, Nagarathna&Nagendra (2010) [45]	n=6 (8 to 14 years, 83% males)	The Autism Research Institutes' form E-2 check list, ITB, RSBTB	15 hour ABA based training and 5 hour IAYT weekly. 5 hours a week for 20 months	Significant improvement in several social responses.
Deorari& Bhardwaj (2014) [46]	n=30 (5 to 16 years)	CARS	Om chanting, Asanas and pranayama 1 hour a day for 3 months	Significant reduction in the symptoms of Autism, including improvement in social communication.

Results

The results of the present review are discussed in nine categories based on the type of intervention focused on the given study. These are behaviour-based interventions, Developmental Interventions, TEACHH approach, Parent-mediated Interventions, speech-based Interventions, electronics-based interventions, augmentative and alternative communication-based interventions, play-based interventions and Yoga-based interventions. In the studies included for the review, a higher participation percentage of males was observed than females.

The age range of individuals with ASD, in the present review, range from one year of age to 16 years of age. There were no Indian studies published that included intervention for individuals with ASD who are older.

In the present review, the duration of a given session for individuals with ASD range from 8 minutes to 2 hours a session, with most studies following 30- 45 minute sessions. The course of the intervention ranged from a session, once in 3 days to a session once a month. The duration of the intervention ranged from one and a half months to eight months.

Behaviour-based interventions

Behaviour based interventions are those interventions that have used behaviour modification techniques to improve skill behaviours or reduce problem behaviours. Effectiveness of behavioural interventions has been consistently proved in different studies [24]. In the present review, two studies have been included that follows behaviour-based interventions. The study by Sivaraman (2017) used behaviour modification techniques like verbal prompting and reinforcements, and the study by Lal &Ganesan (2011) followed a social story approach [25, 26]. Strategies for behaviour management such as verbal prompting and reinforcements were

effective in improving empathetic responses in children with ASD [25]. Consistent and rigorous training have found to be effective for generalization and maintenance of targeted skills [25].

Social stories have also been proved to be very effective in improving self-management skills and reducing socially maladaptive problem behaviours in individuals with ASD [26]. A social story is a short story that describes social situations in very simple terms and explains it with different cues and gives appropriate responses for each situation. Reading the social story to the child, letting the child read it himself, answering questions about the story, role play of the story and follow-up at home resulted in significant improvement concerning managing self-better in social situations for skills such as sharing, waiting for a turn, accepting change and the like. Improvement in social skills, such as stretching hand to support, refraining from pushing others, refraining from pulling others' hair, and the like were observed post-intervention [26]. It was also found that children who read the stories had a better improvement than the children who were told the story [26].

The interventions worked on the improvement of social skills by providing therapy for specific skills. The studies have adopted a rigorous schedule for the intervention that necessitates being present for therapy for at least three days a week, with each session being at least 30 minutes long.

Parent-mediated Interventions

Parent-mediated interventions are those interventions in which parents are guided by therapists to perform interventions for their child. Several studies reveal that parental involvement contributed positively to the effectiveness of intervention for ASD [27, 28, 29]. In the present review, three studies are included that followed parent-mediated intervention for individuals with ASD. These are the studies by Nair et al. (2014), Juneja et al. (2012) and the study by Louis & Kumar (2015)

[30, 31, 32]. The present review reveals that interventions with parents being the sole therapists for the child brought huge strides of improvement in social skills, emotional skills, language, cognition, activities of daily living, expressive language and reduction in the severity of ASD [30, 31]. Illiterate parents and parents from low socio-economic status were also effective trainers facilitating improvements in their children with ASD [31]. Father mediated intervention, was found to cause significant improvements in play skills, socialization, attachment to parents, recognition to name call, language and self-help skills of children with ASD [32].

These studies reveal that the individual with ASD is required to be present for therapy for at least three sessions. The follow-up schedule for the intervention did not follow a rigorous pattern as the parents are trained to deliver the requisite training to their children on a daily basis.

Developmental Interventions

Developmental interventions aim to determine the difficulties experienced by the affected individual that delays their development and help them be at par with their age-matched peers. The present review has included two studies that follow a developmental approach, which is the study by Karanth, Shaista&Srikanth (2010) and the study by Lal &Chabbria (2013) [33, 34].

Early intervention given by a multidisciplinary team of rehabilitation professionals indicated significant gains in social and emotional skills, along-with gains in motor, language, cognitive, social, emotional and activities of daily living functioning post-intervention, and a significant symptom reduction [33].Floortime approach has indicated significant improvements in interactive behaviour, cause and effect relation and turn-taking skill [34]. Though the floortime method also incorporates parents' involvement within the intervention, the study is included in this section as its primary focus is on development.

The studies have adopted a variable schedule for the intervention that necessitates being present for therapy for at least 20 sessions, with each session being at least 30 to 45 minutes long. This schedule of the intervention was found to facilitate the acquisition of a wide range of skills efficiently.

Speech-based Interventions

Speech-based interventions included in the present study, primarily focus on improving speech in the affected individuals. The present review included one study by Paul et al. (2015) that focuses on the effectiveness of sung speech on the improvement of socio-communicative skills [35]. The study suggested that social skills, such as responsiveness to social gestures, eye contact and name-calling response of children with ASD improved significantly through sung-speech [35]. Sung speech also facilitated improvement in compliance and attention through interactive play activities [35].

The intervention schedule consisted of 18 sessions that lasted for three months, with each session being at least 3-4 minutes for each condition. However, as we consider difficulties with the speech in individuals with ASD, it is important to consider Alternative and Augmentative Communication (AAC) methods.

AAC based Interventions

AAC encompasses communication methods that are used to supplement or replace speech or writing for those with impairments in the production or comprehension of spoken or written language. The present review has included three studies that follow AAC based interventions. The study by Lal (2010) used the AAC device, Makaton, for their intervention and the study by Ruhela & Parween (2018) and Lal & Bali (2007) used visual strategies for their intervention [36, 37, 38]. Intervention with the usage of Makaton using pictures and objects was effective in

improving social participation and social behaviour such as eye contact, pointing, joint attention, smiling and the like [36]. Visual communication has been proved to be a successful method of intervention to improve communication and independent functioning in children with ASD [37, 38]. Visual strategies were especially effective in improving receptive and expressive communication skills of individuals with ASD [38]. As communication skills are a vital aspect of socialization, especially while considering non-verbal individuals, these studies were considered important to be part of this review. Hence, AAC proves to be a useful intervention for individuals with ASD.

The studies have adopted a schedule for the intervention that necessitates being present for therapy for 12 to 15 sessions, with each session being at least 20 minutes long.

Electronic-based Interventions

Electronic-based interventions are those interventions that relied on electronic devices for its implementation. The present review has included two studies that use electronic-based interventions. The study by Sankardas & Rajanahally (2017) used the AVAZ app on iPad, and the study by Vadivel & Missal (2014) used an auditory integration training instrument [39, 40]. The AVAZ app was found to be effective in improving the attention span and sitting tolerance, which are crucial elements in socialization, in children with ASD who have the high cognitive ability [39]. Significant improvements in sociability were also revealed after intervention with the auditory integration training instrument developed by ADDONNUSS Electronic Research Technologies [40]. Sufficient maintenance of the skills proved that electronic devices could be a useful element in intervention for ASD [40].

The studies have adopted a rigorous schedule for the intervention that necessitates being present for therapy for at least three days a week, with each session being 30-45 minutes long.

TEACHH Interventions

Another approach is the TEACCH (Treatment and Education of Autistic and Communication-Handicapped Children) approach. This is found to be an effective classroom-based intervention for ASD [41]. The present review has included one study that followed the TEACHH approach. TEACCH utilizes individual strengths within a very structured environment and focuses on components such as the physical structure of the room, visual schedules, work systems and task organization. TEACHH approach was found to be effective in improving independent task completion of conceptual skills, daily living skills, pre-vocational skills and self engagement skills, which are essential skills facilitating better socialization with peers [41]. The functionality of the participants before the start of the intervention was found to be very important in determining the rate of improvement post-intervention [41].

The intervention necessitates being present for therapy for 15 sessions, with each session being 30 minutes long.

Play-based Interventions

Play-based interventions focus on improving play skills in the affected individuals. The present review has included two studies that utilized play-based interventions. The study by Bannerjee & Ray (2013) utilized a structured intervention schedule for their intervention and the study by Gupta (2015) was a case study that followed the theory of mind technique in a semi-structured intervention framework in a playful manner [42, 43]. A structured play therapy schedule significantly improved socialization, communication and cognition in individuals with ASD [42]. Intervention for sensorimotor play and functional play was found to bring significant improvements with socialization in individuals with ASD [42]. The theory of mind technique practiced playfully was successful in inducing significant improvement in socialization,

conversational skills, eye to eye contact, pretend play, emotion recognition, use of abstract language, imitation and locomotion [43].

These interventions necessitate being present for therapy for two to three days a week, with each session being at least 30 to 45 minutes long.

Yoga-based Interventions

Yoga-based interventions are those interventions that have used yoga to bring improvements in the affected population. The present review has included three studies that used yoga-based interventions. In the studies by Radhakrishna (2010), Radhakrishna, Nagendra & Nagaratna (2010) and the study by Deorari & Bhardwaj (2014) [44, 45, 46], Yoga-based interventions have been found to bring significant improvements in children's imitation skills, along-with changes in play pattern with toys, peers and objects [44]. Yoga asanas and pranayama were found to induce significant changes in the imitation skills related to communication, functional object use, language, play and joint attention [44]. Significant improvement in the eye to eye gaze, sitting tolerance, body posture, body awareness, depth perception, balance, imitation skills, self-stimulatory behaviours, spatial relation, self-injurious behaviours were noted post-intervention [45]. Increase in the facial expressions, vocalizations and gazing at peers suggested an improvement in the social approach [44]. Improvements were observed with social interaction, communication, and gestural interactions [44]. Parents reported improvements in social interaction with other children and family members [45]. Results indicate a statistically significant reduction in the symptoms of ASD post-intervention, including improvement in social skills[46]. Parental presence and guidance were instrumental in helping the participants develop social behaviours in the children [44].

The studies have adopted a rigorous schedule for the intervention that necessitates being present for therapy for at least one hour every day for three months to 5 hours a week for 20 months, with each session being at least 45 minutes to 60 minutes long.

Discussion

The review has given a composite view of the present state of interventions which includes improvement of social skills for ASD in India. Though the scarcity in the number of studies limits the generalizability of the review results, it serves to provide a reliable overview of the subject with the existing evidence. When one plans an intervention for ASD, social skills must be aimed for improvement as it is one of the core deficits in ASD. Considering the increasing prevalence of ASD and the fact that India is a vast country with various resource-poor and resource-rich settings, it is essential to identify existing interventions of this kind that may be suitable in resource-poor settings and resource-rich settings. If we define resource-rich and resource-poor settings with respect to the access to trained rehabilitation professionals and relative cost of the intervention concerning the number of visits to the rehabilitation professional, specific approaches seem to be more suitable in certain settings than others.

Acquisition of social skills

Analyzing the studies based on the skills acquired by the participants, the review indicates that behaviour-based interventions are effective in helping the participants acquire the specific skills focused. Though western studies also show that behavioural interventions are effective, they are often criticized for their methods [47, 48, 49, 25]. The initial focus on consistency in these interventions demands continuous presence and constant stimulation for the individual with ASD. As parents are the only people whose constant presence can be expected for a child, this leads one to explore more about parent-mediated interventions. Western and Indian studies have

shown that parent-mediated interventions can be very useful in facilitating improvements in children with ASD [50, 30]. However, studies also show that the success of parent-mediated interventions heavily depends on the level of training the parents to receive and their mental health [31, 32]. Lack of sufficient training may prove to be a drawback for successfully facilitating the acquisition of skills in individuals with ASD.

Analysis of the play-based interventions reveals that each stage of play has a role in improving different social and play skills. Developmental interventions have also shown a high level of success. Studies suggest that a high percentage of children were mainstreamed into school after this intervention, suggesting good acquisition and maintenance of the skills attained [49]. However, the major drawback of the developmental approach is that its applicability is restricted to children who are below six years of age. This is not the situation for other interventions. Though this is a drawback, several studies have repeatedly proved the usefulness and need for early intervention in this population [51, 52].

AAC based interventions have been effective in improving social skills in children with ASD who are non-verbal [53, 54]. The present review proves that its usefulness is in similar lines. Yoga therapy has proven to be an intervention that can complement other therapies practiced. It focuses on improving skills such as imitation and attention that facilitate the acquisition of social skills better.

Though speech-based and TEACHH interventions seem to be promising methods to improve skills in children with ASD, more number of studies that use similar methods may be required for better conclusiveness of these results.

Therefore, on analysis of the efficiency in the acquisition of skills-focused, it is observed that developmental approaches ensure comprehensive coverage of all skill domains, including social

skills, by a group of trained professionals and hence proves to be the most suitable approach for skill acquisition.

Consistency and follow up of intervention

The constant presence of parents, along with their children in most scenarios of the child's life, ensures constant stimulation for the child, ensuring better generalizability and maintenance of skills [31, 32]. This is possible for parent-mediated interventions where parents are trained for stimulating their child adequately. This may not be feasible for behaviour-based, TEACHH based, speech-based or Yoga-based approaches where the therapeutic setting and a trained rehabilitation professional are essential. Though play-based intervention ensures peer presence through the intervention, does not ensure constant therapeutic stimulation. Electronic based and AAC based approaches cannot be implemented in the absence of the necessary equipment. The developmental approach, such as the ComDEALL model requires stimulation of the participant by a group of trained professionals of rehabilitation. This proves that with respect to consistency of intervention, parent-mediated intervention may be the most suitable intervention.

Schedule of the intervention

Though most interventions included in the present review reveal significant improvements in the children, most interventions follow a rigorous schedule. The review reveals that behaviour-based, electronic-based, AAC based, TEACHH based and speech-based interventions follow a rigorous pattern, with respect to the number of visits to the therapist and frequency of the sessions. The schedule of the yoga-based intervention was similar, requiring the affected child to be present for intervention for at least five days a week to one hour a day, in addition to other therapies the child attends. Parent mediated interventions progress in a manner that requires the parents to visit the therapist fewer times compared to any other interventions reviewed in the

present study. Therefore, with respect to the schedule of the intervention, parent-mediated intervention seems to be resource effective.

Requirement of therapists and devices

Developmental approaches, though a very efficient program in bringing improvements in children with ASD, effective implementation of this approach requires rehabilitation professionals who are well trained and available for therapy across different settings [55, 56]. The success of Electronics-based and AAC based interventions depends on the affordability of the device and expertise of the therapist with the device to affect the usefulness of the intervention. Yoga-based and speech-based interventions do not require specific devices. Behaviour-based interventions also do not need specific devices, apart from certain re-enforcers in requisite amounts.

Therefore, the study concludes that, where resources are available, developmental interventions may be most useful as it ensures skill acquisition from a multi-disciplinary team with a rigorous schedule for the maximum gain to the children. However, where resources are unavailable, parent-mediated intervention could be a more useful method of intervention, as it does ensure skill acquisition, ensures consistent stimulation and has a feasible schedule of intervention without any devices.

Critical Analysis of the studies

A major limitation in the studies reviewed is the lack of data on generalization and maintenance of the skills attained through these interventions. Another limitation was the small sample sizes and a higher percentage of male samples in the studies reviewed. Many outcome measures used in the studies were not standardized with the Indian population, questioning its reliability.

The main limitation of the review is the lack of an adequate number of studies available in the published literature on the subject. This also prevents one from performing a meta-analysis on the topic. There were also no studies that included intervention for older children with ASD.

Future research must focus on collecting data on existing treatment methods and its efficacy through extensive surveys, including studies beyond published studies. Future research may also include a meta-analysis on the topic that would give evidence on each intervention's relative effectiveness. Effectiveness of different interventions may be evaluated based on individual characteristics such as age, gender, culture, cognitive ability and the like.

To conclude, the present study reviewed 19 studies that included improving social skills in individuals with ASD in India. With respect to access to trained rehabilitation professionals and the requisite number of visits to the rehabilitation professional, parent-mediated interventions may be more suitable in resource-poor settings whereas developmental intervention may be more suitable in resource-rich settings.

Conflict of Interest: None declared

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