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Parental Views on Effectiveness of Early Behavioral Therapies on Social Skills of Children with Autism

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Abstract
Autism Spectrum Disorder affects early social development and abilities of children in everyday interactions. In Pakistan, research on early behavioural therapies has focused mainly on clinical outcomes, whereas perspectives of parents are underrepresented. Parents observe their children daily. They have an active role in routine therapies, which makes their views important for evaluation of real-life outcomes. This study aims to examine parental views on the effectiveness of early behavioural therapies in improvement of the social skills of children with ASD in Lahore. For this purpose, this study uses a quantitative and cross-sectional survey. The data were collected, through Google Forms via a structured questionnaire, from 43 parents of children with ASD who had received early behavioural intervention therapies which includes Applied Behavior Analysis, Discrete Trial Training, Early Intensive Behavioral Intervention, and the Early Start Denver Model. The questionnaire covers parent-reports regarding changes in eye contact, sharing, initiation of interaction, turn-taking, and comfort-level of their child in social life. The data were analysed using, a software SPSS, descriptive statistics, reliability analysis, correlations, and regression analysis. The results show that parents reported improvements in several social skills. Parent engagement emerged as the strongest predictor of perceived social improvement. Yet the therapy start age, weekly hours, and overall duration of it showed no clear effects. This study concludes that early behavioural therapies yield better outcomes if parents remain actively involved in the process. The findings support the idea of the need for an effective parent-focused and culturally appropriate early intervention programmes for children with ASD in Pakistan.
Keywords: Autism Spectrum Disorder; Early Intervention; Behavioural Therapies; Social Skills Development; Parental Perspectives; Applied Behavior Analysis;

I. Introduction

Autism Spectrum Disorder (ASD) is a neurodevelopmental situation that appears during the early years of a life. It does not fade with time and often remains present during teenage years and sometimes in adulthood. These Children face difficulties in verbal and non-verbal communication. They often struggle to

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develop meaningful social interactions. They have repetitive actions in their behaviour. It may include repeated body movements, strict routines, or uncommon use of objects or parts of toys. Their interests remain narrow and restricted in anything in their use. Therefore, such behaviour curtail their participation in a variety of daily activities (Al-Dewik et al., 2020).

Early intervention (EI) in the research studies has been considered as an important step in the improvement and handling of children with ASD (Maksimović et al., 2023; Ribeiro et al., 2022). When these children receive support in their early life they eventually gain better chances to improve their communication and social interaction skills. Research shows that those children who receive EI at young age attain higher growth in their development and daily life abilities (Fuller & Kaiser, 2020). EI helps children to develop basic skills that later on become the foundation for learning the routine life. These skills include attention, imitation, and joint play (Iao et al., 2024). EI also reduces behaviour problems (Kodak & Bergmann, 2020). Parents also benefit from such EI programmes because they learn strategies that enable them to make their home routines more easy for themselves as well as for their child (McConachie & Diggle, 2007). On the other hand, delayed intervention may result in slower growth of their skills. For this reason, experts consider EI as an essential step in the improvement of long-term growth of children with ASD (Koegel et al., 2014).

Furthermore, behavioral therapies for EI of children with ASD are considered as a pivotal place for their treatment. There are many types of these therapies. All are basically aim to improve social, communication, and learning abilities of these children (Vismara & Rogers, 2010). Amongst these therapies Applied Behavior Analysis (ABA) has been considered as one of the most commonly used methods. It works through making skills into small units and then teaching them with reinforcement. Children practice various designed tasks repeatedly. Then positive responses in these practice work resultantly strengthen their learned behaviour. ABA has been backed by strong research support (Foxx, 2008). It shows effectiveness in improvement of communication, daily routine life, besides academic skills as EI strategy for children with ASD (Vivanti & Pellecchia, 2020).

Then comes the Discrete Trial Training (DTT). It is also a structured form of ABA. It has become part of EI method for recovering the societal, communication, educational, and self-help complications in ASD. It is basically founded on the initial work of Ivar Lovaas, however, it has been deliberated extensively and continues one of the most usually used instruction procedures and models of scheduling EI. It uses short and simple trials to teach specific skills. Each trial includes an instruction, response of child, and its instant feedback. This method lets children to master one skill before learning the next one (Lerman et al., 2013).

Next comes the Early Start Denver Model (ESDM). The ESDM is a play-based, realistic intervention which is designed for autistic children who are aged between 1 to 5 years old. It was developed by two psychologists one is Sally J. Rogers and the second is Geraldine Dawson. It merges principles of ABA with play-based and relationship-focused activities (Rogers, 2016). ESDM helps those children who are under the age of five in improvement of their communication, social meetings, and cognitive development. Thereafter, there is a Cognitive Behavioural Therapy (CBT). It is normally used for older children and young people with ASD. It deals with the emotional and behavioural issues for example

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anxiety, rigidity, and problem-solving problems (Danial & Wood, 2013). Studies show that this CBT also helps in reduction of anxiety and improvement of coping skills, which backs improved social participation of children with ASD (Rotheram-Fuller & MacMullen, 2011). These behavioural therapies are used as structured methods to target the required developmental need of children with ASD. They are used to enhance their social communication, to reduce problem behaviours, and also to make them independent in their routine life, ultimately to make them able for all circumstances like in home, school, and community environments.

Social skills are not only essential for the growth of children with ASD but also indispensable for all. These skills are the source of meaningful interaction with family, friends, and other members of our society. Children with ASD time and again struggle with communication, eye contact, sharing, and cooperative play. These inabilities limit them to build healthy relationships and to participate in group activities. When social abilities improve, eventually they gain enhanced opportunities to participate in routine life. The more social skills these children have the more they will be able to reduce behavioural challenges and increase chances of independent daily life. In the long term, these abilities help them to adjust in routine society life. Therefore, experts and parents consider social skill development as a principal goal of EI and behavioural therapies for their children with ASD (Krasny et al., 2003; Scattone, 2007; Wang & Spillane, 2009; Williams White et al., 2007).

Parents have the main role in the growth of children especially one with ASD. This fact makes their perspectives more valuable in comprehension of the effectiveness of EI than anyone else. Since they are first one who observe their child's behaviour in everyday life and they notice changes in their social interaction, communication, and independent life. Few parents also try to learn and continue therapy practices at home. Therefore, their views provide practical knowledge which is very valuable sources for the evaluation of behavioral therapies. Moreover, in Pakistan, research on autism is growing. However, most of the studies are on professional or clinical perspectives. There is a research gap which discuss perspectives of parents. This gap creates a need to cover parental exposure s and their concerns. Therefore, this study attempts to cover this gap with an aim to help teachers, therapists, and policymakers to understand and design EI therapies more effectively, culturally suitable, and also accessible for families of children with ASD.

Therefore, this research is important because it covers the gap in available research on ASD in Pakistan through paying a special focus on parental perspectives. Though behavioural therapies have been discussed in clinical and professional literature on the topic, yet little is known about how parents perceive real-time changes in social skills of their children in daily life. Since, parents observe their children at home, school, and community and they also continue therapy practices outside clinical environments, therefore, their views will provide direct and real-time insights into the practical impact of EI. Through research and writing on parental experiences in Lahore, this study contributes in the shape of real-time local evidence on how EI and therapies work on social skills such as eye contact, sharing, and group participation. The findings of this study extend current knowledge beyond clinical results and highlight the role of parental involvement in effectiveness of therapies. This contribution helps therapists and educators in improvement of parent-child engagement strategies

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and will help policymakers to design EI programmes which is in consonance with cultural and contextual realities of Pakistan.

II. Literature Review

ASD is a complex neurodevelopmental disorder. It generally appears in the early years of childhood. It is characterised as a result of persistent impairments in verbal and non-verbal communication. Besides, it also creates difficulties in meaningful social relationships (Oberman & Kaufmann, 2020). Children with ASD commonly show constrained and repetitive behaviours. This may include repetitive body movements, stern adherence to their routines, and limited or sometimes slight interests in others work. Such behavioural patterns often hamper their active participation in daily life activities (Yadav, 2020). As ASD continues through teenage years and adulthood, therefore, EI has been regarded as vital step in order to reduce functional limitations and to promote long-term developmental skills in children with ASD (Koegel et al., 2014).

A. The Rationale for Early Intervention

EI has been recognized internationally as an essential fundamental first step in the development, social growth and treatment of children with ASD. In this regards, Fuller and Kaiser (2020) in their work shows that those children who receive EI during their early years exposure show more improvement in their communication and social interaction skills. EI programmes target foundational abilities, such as attention, imitation, and joint play, which then serve as essential precursors for routine learning (Shire et al., 2020). Furthermore, the importance of EI lies in the concept of neuroplasticity. Studies show that since ASD is a neurodevelopmental condition which creates difficulties in communication, social interaction, restricted interests, and repetitive behaviours, the Neuroplasticity refers to the brain's capacity to reorganise and adapt to environmental changes. In ASD, this process is atypical. It disrupts information process, sensory integration, and social cognition (Chen et al., 2024).

Research shows that customised EI programmes if initiated before the age of three could produce considerable developmental benefits (Towle et al., 2020). EI not only facilitates skill learning but it also influences the comprehensive neurodevelopmental path. On the other hand, Lidstone, (2025) show that those children who missed EI they face severe difficulties in their learning skills.

B. Social Skills are the Main Result

Social skills are those which helps us in meaningful interactions. It includes behaviours for instance eye contact, sharing, and cooperative play. These skills are very important for children with ASD in order to enable them to build a healthy relationship with their family members and the social life. In the absence of adequate social adaptive ability, such children then face struggle with group participation, social reciprocity, and observance of routine social norms. Therefore, enhancement in their social abilities not only increases opportunities for them to make an active participation in daily routine life but also helps them to reduce bad behaviours. If continued, these improvements them contribute in their larger social adjustment and in achieving their independence (Ke et al., 2022; Moody & Laugeson, 2020; Øzerk et al., 2021).

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C. Theoretical Frameworks of Early Behavioural Therapies

Researchers have time and again reviewed various behavioural and EI for children ASD in their studies. Among these, Comprehensive Early Intervention, which is also known as Early Intensive Behavioral Intervention (EIBI), has shown substantial effectiveness in improvements of intelligence and adaptive skills (Lovaas, 1987). Similarly, Naturalistic Developmental Behavioral Interventions, also showed to make improvements in social and communication skills (Crank et al., 2021). Nevertheless, ABA still serves as the first methodological framework for behavioural interventions in ASD. It works through deconstruction of complex behaviours into smaller points of consideration, with manageable tasks and then it reinforces desired responses through consistent, repeated practice (Vivanti & Pellecchia, 2020). Available research also backs the effectiveness of ABA in enhancement of communication, daily routine life, and academic skills (Foxx, 2008).

Then comes the DTT therapy. within the framework of ABA this is a structured, instructor-led approach. It is based on the pioneering work of Ivar Lovaas. Lerman et al., (2016) in their show that this therapy uses brief and focused instructional trials which are comprising on three components: one, an antecedent (instruction), second, a behavioural response from the child, and third the immediate consequence or reinforcement which is required to be delivered in a distraction-free environment. DTT has proved to be particularly effective for training complex skills to child with ASD, including those which demand continued attention and repetition. This approach ensures mastery of each specific task before proceeding to the next one.

Naturalistic Developmental Behavioral Interventions (NDBIs) are also worth to discuss here. These EI combine principles from developmental psychology and ABA with an aim to teach skills in natural and playing environments. These interventions monitor the child's direction and then use natural reinforcements to encourage learning in overall developmental domains such as communication, social interaction, and play within daily routines (Frost et al., 2020). NDBIs are also regarded as one of the best-practice approach for EI in ASD.

The ESDM, which has been developed for children who are aged between one to five years, also represents the above referred approach. It is play-oriented and child-focused EI. It utilises the natural interests of the child to implant education in enjoyable environment. It integrates principles of ABA and initial childhood development with an aim to enhance social communication, cognitive, and socio-emotional skills. It works through one-on-one therapy daily. This EI emphasizes on learning through joint play and social engagement circumstances, and it may involve 10 to 15 hours of planned sessions per week (Fuller et al., 2020).

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Table 1: ***Comparison of EI Models (ABA, DTT, ESDM)***

Intervention Model	Core Principles	Primary Teaching Method	Social Skill Focus	Generalization Potential
Applied Behavior Analysis (ABA) / EIBI	Reinforcement, data-driven assessment.	Covers structured (DTT) to naturalistic (NDBI) methods.	Communication, imitation, joint attention, behavior reduction.	Varies by specific method.
Discrete Trial Training (DTT)	Highly structured, adult-directed, intensive repetition in small units.	Antecedent-Behavior-Consequence (A-B-C) trials, tabletop setting, tangible reinforcement.	Foundational skills (attention, compliance, basic communication).	Requires explicit programming for generalization.
Early Start Denver Model (ESDM) (NDBI)	ABA principles merged with developmental, relationship-based strategies.	Play-based, naturalistic teaching, shared interests, reciprocal interaction,	Social engagement, joint attention, emotional sharing, cognitive development.	Higher, due to teaching within natural environment.

The available research on the ASD in Pakistan still under progress. The most of the work is on professional, clinical, or on the epidemiological aspects. This existing work has overlooked the parental perspectives, despite of the fact that parents are the primary representatives and observers of behavioural change in daily life of their child. Their insights are indispensable to understand what kind of skills their child have and what to learn. The real measure of therapeutic success are the parents (Bent et al., 2023; Viljoen et al., 2021).

This literature gap strengthens the rationale for this study which aims to shed light on parental perspectives in Lahore regarding the real-time effectiveness of early behavioural therapies on social skills of their child suffering with ASD. This will provide evidence to shape informed-based local policies, to develop culturally responsive training curricula, and to design feasible EIs suitable for this country sociocultural context.

D. The Conceptual Framework

The conceptual framework is about the relationship between the:

Early Behavioral Therapy → Child Social Skills.

The conceptual framework explains how EI therapies contributes in enabling the child to gain social skills. The model focuses on four elements of therapy experience:

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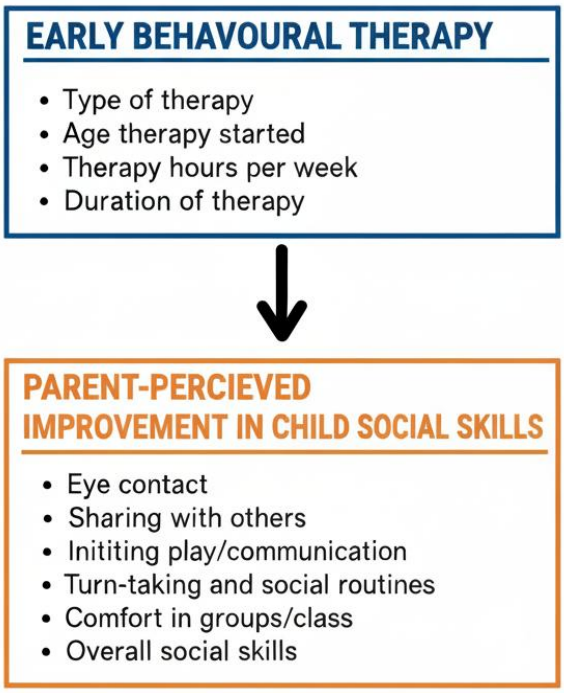
1) Type of therapy,
2) The age it begins,
3) Weekly hours, and
4) Overall duration.

These elements form the independent variable for this study. Then the dependent variable are parent-reported improvements, which they observed, in main social skills, which includes eye contact, sharing, initiation of interaction, turn-taking, comfort in social life gatherings, and in overall social functions. This framework proposes a direct link between therapy experience and these observed results. It shows how early and consistent behavioural interventions are helpful in social development of children with ASD.

Figure 1. Conceptual Framework of Early Behavioural Therapy and Parent-Perceived Social Skill Development



III. Research Methodology

This study uses a quantitative, cross-sectional survey, which is designed to cover real-time parental perspectives on the effectiveness of EI therapies in improvement of social skills of their children with ASD. For this purpose, one structured questionnaire has been developed through Google Forms, and it is used to collect real-time information from parents who are residing in Lahore. The target population basically comprises on parents or caregivers (if any) of children with ASD who have received EI therapies such as ABA, EIBI, DTT, or the ESDM. For this study primarily purposive convenience sampling technique, supplemented by snowball sampling methodology, has been used to add participants through different therapy centres, special schools, and online parent social media support groups. The intended sample size is about 35–50 respondents. However, 43 responses could be obtained from parents through Google Forms. Further, the design questionnaire includes sections on participant consent, demographic details, therapy characteristics, and perceived results in social skills. Data is collected anonymously and analysed using SPSS. Descriptive statistics has summarised responses, while *t*-tests, ANOVA, and correlation

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analyses aid to evaluate associations between therapy variables and perceived improvements.

IV. Analysis of Results

The analysis has examined how parents perceived the effectiveness of EI and behavioural therapies on the social skills of their children with ASD. During the study, the descriptive statistics has showed that most respondents were mothers who are aged between 26 and 45 years. Most children were in younger age groups, with the largest share between 3 and 5 years. The parents have showed diverse educational experiences, which shows that families from different education levels are taking behavioural therapies in Lahore. Further, the reliability analysis has confirmed that the seven-item social skills scale had acceptable internal consistency. The Cronbach's alpha value of .727 also showed that the items measured the same construct. No item required removal. Parents most frequently have identified eye contact, sharing, initiation of play, and overall social routines as signs of improvement.

Moreover, the correlation analysis has also showed a moderate positive relationship between parent engagement and perceived social skill improvement. It shows that the parents who have followed therapy routines, practiced activities at home, and maintained contact with therapists, they have reported greater progress in their children. Weekly therapy hours and therapy duration have showed small links with parent engagement. It means weekly hours alone did not predict social outcomes. The age at which therapy began also showed no clear relationship with social skill development. Likewise, the regression analysis also supported these results. The model explained 21.4% of the variance in social skills. Parent engagement has emerged as the only significant predictor. Parents who were more involved in the therapy process have reported greater improvement in their child's social skills. Therapy start age, weekly hours, and duration have showed no meaningful effects. These findings could be used to recommend that parental involvement mattered more than therapy structure or its timing in this sample.

A. Descriptive Statistics

The sample involved in study comprises on 43 parents. Most respondents were between 26–35 years (41.9%) or 36–45 years (48.8%); the smaller number fell into the youngest and oldest categories. Mothers have the largest share in participants; they are 88.4%. Whereas, fathers have 11.6%. The education levels varied. The one-third of the parents are Matric/O-Level qualified (32.6%). About 28% had a Bachelor's degree. The Master's degree holders are 18.6%; 11.6% are Intermediate/A-Level education. Moreover, most parents (86%) were mothers, and this shows that the major caregiving role are playing by them in many households. Sample of participants also shows that large share of families (90.7%) lived in Lahore, and only a few (9.3%) lived in other cities. The ages of Children were from early to middle childhood. Statistics has revealed that about 44.2% were in the 3-5 years of age group, and 32.6% were in the 6-8 years of age. The smaller groups were in the 9-11 year and it also includes the 12+ year categories (each 11.6%). Moreover, the age at ASD diagnosis also showed variations. The cases can be distributed from early to later diagnostic stages. The measures which are related to therapy (start age, weekly hours, and duration) also showed variations: it shows the different therapy experience patterns.

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Table 2: ***Descriptive Statistics of Participant and Therapy Characteristics***

Statistics

		Age Group Parents	Parents Gender	Education	Relationship with Child	Location	Child Age	Child Gender	Age at ASD diagnosis	Age therapy started	Average therapy hours per week	Duration of therapy so far
N	Valid	43	43	43	43	43	43	43	43	43	43	43
Mean		2.47	1.88	3.53	1.95	1.09	1.91	1.19	2.72	1.84	1.72	2.58
Mode		3	2	5	2	1	1	1	2	2	1	4
Std. Deviation		.667	.324	1.316	.375	.294	1.019	.394	1.098	.721	.908	1.295
Minimum		1	1	1	1	1	1	1	1	1	1	1
Maximum		4	2	5	3	2	4	2	5	3	4	4

Table 3: ***Age Distribution of Parent Participants***

Age Group Parents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	7.0	7.0	7.0
	2	18	41.9	41.9	48.8
	3	21	48.8	48.8	97.7
	4	1	2.3	2.3	100.0
	Total	43	100.0	100.0	

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Table 4: ***Gender Distribution of Parent Participants***

Parents Gender					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	1	5	11.6	11.6	11.6
	2	38	88.4	88.4	100.0
	Total	43	100.0	100.0	

Table 5: ***Educational Level of Parent Participants***

Education					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	1	4	9.3	9.3	9.3
	2	5	11.6	11.6	20.9
	3	12	27.9	27.9	48.8
	4	8	18.6	18.6	67.4
	5	14	32.6	32.6	100.0
	Total	43	100.0	100.0	

Table 6: ***Relationship of Respondents to the Child***

Relationship with Child					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	1	4	9.3	9.3	9.3
	2	37	86.0	86.0	95.3
	3	2	4.7	4.7	100.0
	Total	43	100.0	100.0	

Table 7: ***Residential Location of Parent Participants***

Location					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	1	39	90.7	90.7	90.7
	2	4	9.3	9.3	100.0
	Total	43	100.0	100.0	

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Table 8: ***Age Distribution of Children with ASD***

Child Age					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	1	19	44.2	44.2	44.2
	2	14	32.6	32.6	76.7
	3	5	11.6	11.6	88.4
	4	5	11.6	11.6	100.0
	Total	43	100.0	100.0	

B. Reliability of Measurement Scales

The seven-item scale that measures perceived improvement in the social skills of children has showed that there is an acceptable internal consistency, with a *Cronbach's alpha of .727*. This value meets the standard threshold for the purposes of behavioural research. It also indicates that the items reflect the same original construct. The item-total correlations have been ranged from low to moderate. The links have appeared in improvement of social skills and social sharing behaviours. This proposes that parents are viewing these areas as main indicators of progress. The removal of any item did not raise the alpha to a meaningful level, and thus shows that all items contribute to the scale. The scale mean and variance also support the coherence of these items as a grouped measure of social skill development. Therefore, the reliability results confirm that the social skills scale is suitable for further analysis.

Table 9: ***Reliability Statistics for the Social Skills Scale***

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.727	7

Table 10: Item-Level Descriptive Statistics for the Social Skills Scale

Item Statistics			
	Mean	**Std. Deviation**	**N**
My child shows improved eye contact during interactions.	3.37	1.254	43
My child shares toys or interests more often with others.	2.56	1.221	43
My child initiates play or communication with peers.	2.42	1.220	43
My child follows turn-taking and social routines better.	2.77	1.172	43
My child is more comfortable in group or classroom activities.	3.02	1.205	43

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Overall, behavioural therapy has improved my child's social skills.	3.12	1.313	43
My child applies skills learned in therapy at home or school.	3.09	1.288	43

Table 11: ***Item–Total Statistics for the Social Skills Scale***

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
My child shows improved eye contact during interactions.	16.98	23.976	.246	.740
My child shares toys or interests more often with others.	17.79	21.074	.535	.672
My child initiates play or communication with peers.	17.93	21.257	.518	.677
My child follows turn-taking and social routines better.	17.58	23.678	.308	.724
My child is more comfortable in group or classroom activities.	17.33	22.034	.449	.693
Overall, behavioural therapy has improved my child's social skills.	17.23	19.278	.656	.638
My child applies skills learned in therapy at home or school.	17.26	22.290	.380	.710

Table 12: ***Scale-Level Descriptive Statistics for the Social Skills Measure***

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
20.35	28.566	5.345	7

C. Correlation Analysis (Pearson)

The correlation results have shown that how therapy-related factors are relatable to views of parents about their child's social skill development. Parent engagement (**SC_total**) had a moderate positive correlation with social skills

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(**SOC_total**) (r = .395, p = .009). This means that parents who are more involved in therapy, and those who use strategies at home, and work with therapists, they tend to report more social improvement in their child than rest. The parent engagement has also shown positive links with therapy hours (r = .407, p = .007) and therapy duration (r = .314, p = .040), and this proposes that more consistent experience to therapy backs more parental involvement.

Furthermore, the study shows that the therapy hours per week also had a moderate positive relationship with therapy duration (r = .323, p = .034). However, therapy hours revealed almost no relationship with social skills (r = .006, p = .970). This indicates that weekly therapy alone did not predict social skill improvements in this sample. Moreover, the age at which therapy started did not show any substantial correlation with social skills (r = .027, p = .861). Those children who began therapy earlier or later have appeared to show parallel levels of improvement. Nevertheless, the duration of therapy has showed a small positive trend with social skills (r = .214, p = .168). This shows that families with extended treatment may observe more advancement, though this effect was not strong enough to meet statistical importance.

Notwithstanding, these findings are important because they highlight, through real-time information which has been obtained from parents, that how parent engagement acts as one of the key factor which is linked with perceived improvement in the social skills of their child life. The results advocate that how parent's participation in therapy routines may matter more than therapy times or weekly intensity. This understanding backs the role of family involvement in EI. It also reinforces the value of parent-focused therapies and their training within behavioural therapy programmes.

Table 13: ***Pearson Correlation Matrix of Parent Engagement, Therapy Characteristics, and Social Skills***

Correlations

		SC_total	Age therapy started	Average therapy hours per week	Duration of therapy so far	SOC_total
SC_total	Pearson Correlation	1	-.131	.407**	.314*	.395**
	Sig. (2-tailed)		.403	.007	.040	.009
	N	43	43	43	43	43
Age therapy started	Pearson Correlation	-.131	1	.074	.002	.027
	Sig. (2-tailed)	.403		.636	.991	.861
	N	43	43	43	43	43
Average therapy hours per week	Pearson Correlation	.407**	.074	1	.323*	.006
	Sig. (2-tailed)	.007	.636		.034	.970
	N	43	43	43	43	43
Duration of therapy	Pearson Correlation	.314*	.002	.323*	1	.214
	Sig. (2-tailed)	.040	.991	.034		.168

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so far	N	43	43	43	43	43
SOC_total	Pearson Correlation	.395**	.027	.006	.214	1
	Sig. (2-tailed)	.009	.861	.970	.168	
	N	43	43	43	43	43

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

D. Regression Analysis

The regression model is used to examine whether the therapies characteristics and parent engagement predicted improvements in social skills of their children. The model explained 21.4% of the variance in the social skill scores (R^2 = .214). This shows that these variables also contribute in views of parents about the progress. The overall model was near to the predictable significance level (F = 2.592, p = .052). Therefore, this shows that there is a significant trend but not so strong so that it can be a statistical fit one. Moreover, among the four predictors, parent engagement (SC_total) was the only variable that has showed a clear effect on social skills (β = .459, p = .008). The parents who were more involved in therapies and who used strategies at home have been tended to report higher gains in social abilities of their child. Therapy start age, weekly hours, and duration did not show significant effects. Their coefficients were small and non-significant. This suggests that, within this sample, these therapy features did not predict how much improvement parents observed.

These results underscore the main role of parent participation in EI behavioural therapy. When parents are engaged and apply knowledgeable strategies at home, then they observe more progress in social development of their child. This shows an important practical implication: there should be focus to improve parent training, even when therapy structure or intensity varies, their involvement may enhance the results of EI programmes.

Table 14. ***Regression Model Summary Predicting Social Skills***

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.463[a]	.214	.132	.71148

a. Predictors: (Constant), SC_total, Age therapy started, Duration of therapy so far, Average therapy hours per week

Table 15. ***ANOVA Results for the Regression Model Predicting Social Skills***

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.249	4	1.312	2.592	.052[b]
	Residual	19.236	38	.506		
	Total	24.485	42			

a. Dependent Variable: SOC_total

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b. Predictors: (Constant), SC_total, Age therapy started, Duration of therapy so far, Average therapy hours per week

Table 16. ***Regression Coefficients for Predictors of Social Skills***

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.630	.519		3.140	.003
	Age therapy started	.111	.155	.105	.715	.479
	Average therapy hours per week	-.198	.137	-.236	-1.447	.156
	Duration of therapy so far	.086	.092	.146	.938	.354
	SC_total	.325	.116	.459	2.808	.008

a. Dependent Variable: SOC_total

E. Discussion

The findings of this study has revealed the role of parents in the development and progress of their children with ASD who receive EI. Although therapies such as ABA, DTT, and ESDM have been regarded effective therapies in international research, yet their effectiveness in daily life depends on how parents work with therapists and how they apply strategies at home. This study shows that parents who remain actively involved during therapies and those who continue practices at home observe stronger social responses in their children.

The results of this study has also revealed that intensity of therapies, measured through weekly hours, did not predict social improvement on its own. This outcome may reflect differences in therapy quality, home environments, and access to specialised services in Lahore. Many families face different constraints which are related to cost, travel, and limited availability of trained professionals. Therefore, weekly hours do not cover the full learning context of the child with ASD. In addition, the age at which therapy began has also showed no clear relationship with social outcomes in this sample. Though prior research supports EI, however, children in this study has shown to begin therapies at different ages and yet they still showed comparable progress. This finding recommends that parental involvement can support social development even when therapy begins later.

The overall results point to the value of parent-focused approaches and therapies within the context of EI. Programmes which include parent trainings, home-based practices, and close parent–therapist collaboration may support social skill development and improvement more than otherwise. This study thus contributes to available limited research in Pakistan through covering real-time parental views, which reflect their everyday behavioural change.

V. Conclusion

This study has attempted to analyse parental views on the effectiveness of early behavioural therapies in improvement of the social skills of children with ASD in Lahore. The findings have answered the main research question through

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showing that parents perceive improvements in key social skills, including eye contact, sharing, initiation of interaction, turn-taking, and comfort in group settings. The analysis also confirms that early behavioural therapies contribute to social development, yet the strength of this effect depends mainly on the parental engagement rather than on the therapies alone. The correlation and regression analysis results also show that parent engagement was the only consistent predictor of perceived social improvement, whereas the therapy start age, weekly hours, and duration have showed no meaningful effects. These results support the hypothesis that parental involvement plays effective role in therapy outcomes, whereas the hypotheses related to intensity of therapy and timings were not supported in this sample.

Moreveor, from a theoretical perspective, the findings have reinforced value-based and family-centred approaches for the EI through showing that learning extends beyond clinics into daily routines. The results are in consonance with prior international research that also do emphasises on parent participation to bring effective behavioural changes. Through shifting attention from therapy quantity to parental involvement, this study adds context-specific real-life insights into the existing behavioural intervention literature. Moreover, the study has some practical inferences for therapists and policymakers. Therapy centres should prioritise parent trainings and communications, and guide them for home-based practice besides giving formal sessions. Policymakers should support affordable and accessible programmes that are designed to integrate parents as an active partner rather than as passive recipients of services. These steps are realistic ones and they are within existing intervention models and also directly reflected in this study's evidence.

However, there are several limitations of this study that are required to be acknowledged. The findings are based on a small sample from Lahore, though it is tried to be a large one which could not be found, and it rely on parent-reported perceptions, which also limits generalisability. The cross-sectional survey based study design also restricts its conclusions about the long-term outcomes of EI. Therefore, the future research should include bigger samples, numerous regions, longitudinal designs, and mixed methods of study with an aim to cover both perceived and observed changes.

In the end, this study highlights the importance of parental voices in evaluation of EI and early therapies. When parents are informed, supported, and are more involved, then EI has much potential to improve social development and to promote substantial participation for children with ASD.

VII. Recommendations

On the basis findings of this study, there are several recommendations which are hereby proposed. Therapy providers should integrate structured parent trainings into their EI programmes. Parents need more guidance on how to apply behavioural strategies during their daily routine life. Therapists should also provide simple, practical home-based activities and maintain a regular communication with parents with an aim to support consistency in all environments and circumstances. These actions will improve learning without increasing therapy hours. Further, the policymakers and therapists should also expand EI therapies through community-based and affordable programmes. Administration should focus on investment in parent-focused models, for Pakistan, with an aim to improve outcomes even when resources are limited and

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different areas than Lahore. Last but not least, there is a need to make effective awareness initiatives in schools and healthcare centers to promote EI and identification.

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