ID: 624

The Effect of Parent-Mediated Intervention on Social-Emotional Skills and Social Responsiveness in Children with Autism Spectrum Disorder and Parent Competency

Hamid N[1,2], Lim BC[3], Che Daud AZ[1,4] and Sabri MQM[1]

[1]Centre for Occupational Therapy Studies, Faculty of Health Sciences, Universiti Teknologi MARA, Malaysia, [2]Putrajaya Hospital, Federal Government Administrative Centre, Putrajaya, Malaysia, [3]Child Developmental Clinic, Sarawak General Hospital, Kuching, Malaysia, [4]Special Population Research, Innovation and Knowledge (SPaRK), Faculty of Health Sciences, Universiti Teknologi MARA, Malaysia

No financial disclosures

PROBLEM STATEMENT

WFOT Congress 2026
9-12 FEBRUARY BANGKOK, THAILAND
Inspiring **Change**, *Innovating* **Futures**

01

Shortage number of Occupational Therapists 1:10 000

02

Long waiting list: once/ 2-3 months

03

Lack of available local evidence on the Parent-Mediated Intervention in local context

04

Increasing referral number of children with ASD

STUDY OBJECTIVE

This study aimed to investigate the effectiveness of PMI in improving social-emotional, social-responsiveness skills in children with ASD and parent's competency

LITERATURE REVIEW

Parent-Mediated Intervention (PMI)

- Strong evidence was found for the efficacy of PMI for increasing child, joint attention.
- Moderate evidence was found for the improvement of language scores, expressive language, nonverbal communication, initiation and response to interaction, behavior, play, adaptive functioning, ASD symptoms, and social communication (Althoff C.E et.al,2019)
- Parent delivered interventions were considered equally effective as therapist-delivered intervention (Novak I, Honan I.,2019)

Developmental-Individual Differences-Relationship (DIR Floortime)

- Home-based DIR/Floortime™ intervention at an average of 14.2 hours/week for a year significantly improves developmental skills and reduces autistic symptoms in 47% ASD children (Pajareya,2012).
- Parental training should be offered to parents of children with autism spectrum (Grade A) Ministry of Health Malaysia. Management of Autism Spectrum Disorder in Children and Adolescents (2023)

METHODOLOGY

DESIGN, SAMPLE

- Quasi-experimental pre-post design
- Purposive sampling
- 30 children with ASD and their parents
- Occupational Therapy Unit, Hospital Putrajaya & Pusat Jantung Sarawak

OUTCOME MEASURE

- Functional Emotional Assessment Scale **(FEAS)**
- Social-Responsiveness Scale **(SRS-2)**
- Parent Sense of Competency **(PSOC)**

ANALYSIS

- Repeated measure analysis of variance (ANOVA)
- Time set as within-subject factor
- FEAS, SRS-2 & PSOC measured 3 times (pre-mid-post-intervention)
- Effect size calculated using partial eta squared

The Functional Emotional Assessment Scale
Administration and Scoring Form

Age: 3-4 Years
Behaviors: Child

Name of Child: _____ Date of Testing: _____
Age of Child: _____
Person Playing With Child: Mother: __ Father: __ Caregiver: __ Examiner: __

General Scoring

Scoring is on a two-point scale for most items, except where indicated, and is:
0 = not at all or very brief
1 = present some of time, observed several times
2 = consistently present, observed many times
Indicate N/O for behaviors that are not observed.

Where indicated to convert a score, transform the scoring as follows:
0 becomes a 2
1 = 1
2 becomes a 0

Scores for symbolic play should be entered in the SYM column and scores for sensory play entered in the SENS column. When the examiner facilitates play with the child, enter scores in the EXAM column. The last column may be used for entering scores for additional caregivers (e.g., mother, father, foster parent, babysitter) observed playing with the child.

Scores are interpreted for the primary caregiver playing with the child for the symbolic and sensory play situations. If scores do not differ for symbolic and sensory play, then only one score is interpreted. However, if behaviors differ for the different play situations, then two scores are calculated, one for symbolic play, one for sensory play. These are interpreted using the cutoff scores presented in the profile form.

WPS SRS-2 AutoScore Form Preschool ○MALE ○FEMALE

INSTRUCTIONS

PLEASE PRESS HARD WHEN MARKING YOUR RESPONSES.

1 = NOT TRUE 2 = SOMETIMES TRUE 3 = OFTEN TRUE 4 = ALMOST ALWAYS TRUE

SAMPLE

Parenting Sense of Competence Scale
(Ellicott-Watkins & Wanderman, 1978)

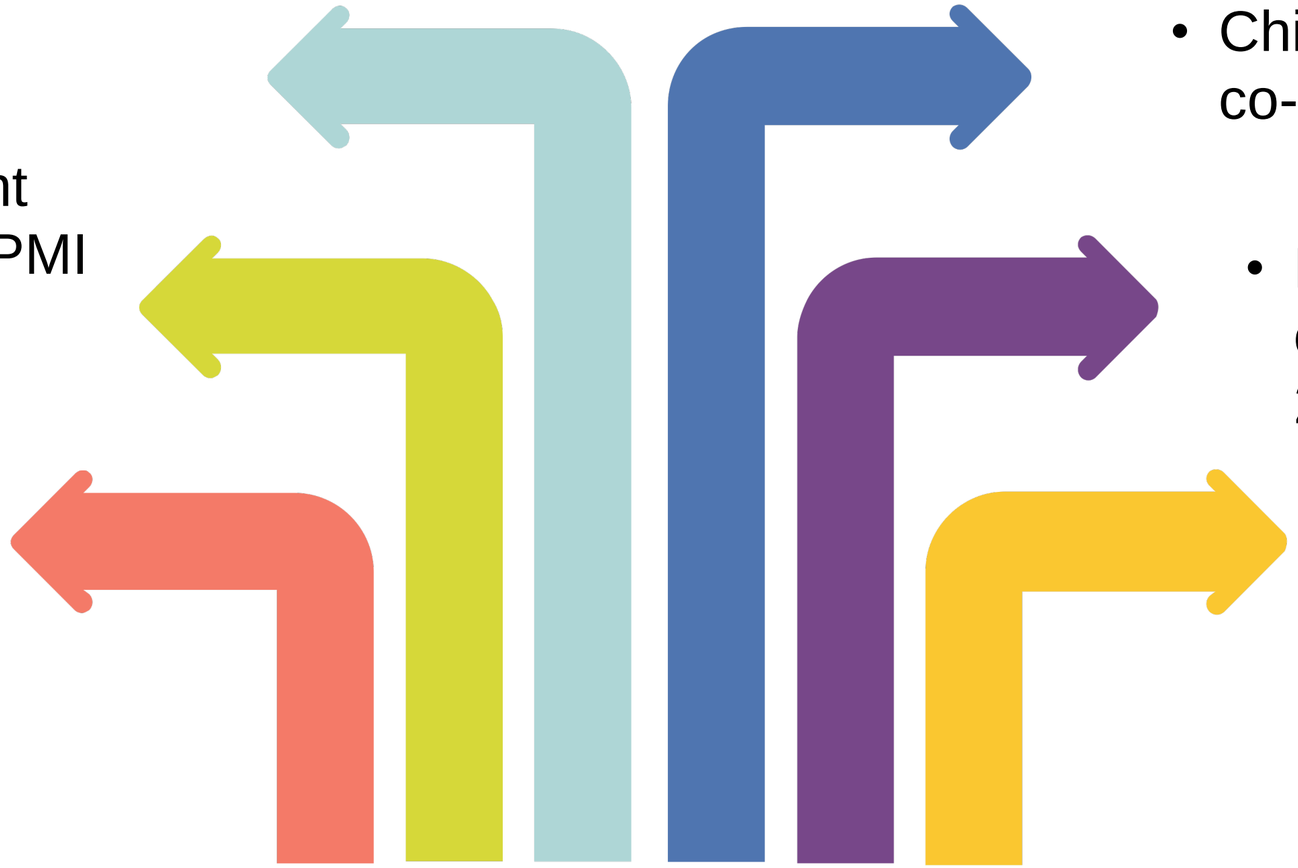
Please rate the extent to which you agree or disagree with each of the following statements.

Strongly Disagree 1 | Disagree 2 | Somewhat Disagree 3 | Somewhat Agree 4 | Agree 5 | Strongly Agree 6

1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired. 1 2 3 4 5 6
2. Even though being a parent could be rewarding, I am frustrated now while my child is at his / her present age. 1 2 3 4 5 6
3. I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot. 1 2 3 4 5 6
4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated. 1 2 3 4 5 6
5. My mother was better prepared to be a good mother than I am. 1 2 3 4 5 6
6. I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent. 1 2 3 4 5 6
7. Being a parent is manageable, and any problems are easily solved. 1 2 3 4 5 6
8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one. 1 2 3 4 5 6
9. Sometimes I feel like I'm not getting anything done. 1 2 3 4 5
10. I meet by own personal expectations for expertise in caring for my child. 1 2 3 4 5 6
11. If anyone can find the answer to what is troubling my child, I am the one. 1 2 3 4 5 6
12. My talents and interests are in other areas, not being a parent. 1 2 3 4 5 6
13. Considering how long I've been a mother, I feel thoroughly familiar with this role. 1 2 3 4 5 6
14. If being a mother of a child were only more interesting, I would be motivated to do a better job as a parent. 1 2 3 4 5 6
15. I honestly believe I have all the skills necessary to be a good mother to my child. 1 2 3 4 5 6
16. Being a parent makes me tense and anxious. 1 2 3 4 5 6
17. Being a good mother is a reward in itself. 1 2 3 4 5 6

INCLUSION

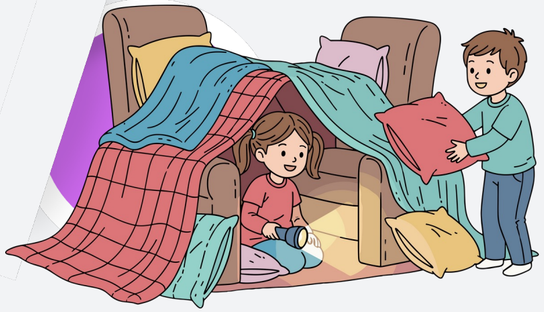
- Did not receive any early intervention program
- At least one parent committed to the PMI & able to give informed consent
- Attended 9 individual parent coaching sessions, parent talks and virtual support group



EXCLUSION

- Children with other co-occurrences
- Have received an EIP of more than 20hrs/week
- Parents with chronic medical conditions required assistance in daily activities

INDIVIDUAL PARENT COACHING PROCEDURE



DIR Floortime

DIR Floortime 3 basic strategies; Follow Child Lead, Challenge Play, Expand Interaction

Play

Sensory, Object, Symbolic

Direct Coaching

- Parents Talk,
- 9 Individual Parents Coaching sessions for 6 months

Monitoring

Monitoring through Home Program

Naturalistic

20-30mts/ session up to 6x/day in naturalistic environment; home, playground

Demographic Characteristic

Table 4.1 Demographic Characteristics of The Respondents (n=30)

Child's Characteristics	n (%)	Primary Caregiver's Characteristics	n (%)
Age group		Age group	
≤ 3 years	4 (13.3)	≤ 30 years	5 (16.7)
> 3 years 1 month - 5 years	18 (60.0)	> 30 - 40 years	19 (63.3)
> 5 years 1 month	8 (26.7)	> 40 years	6 (20.0)
Gender		Gender	
Female	8 (26.7)	Female	26 (86.7)
Male	22 (73.3)	Male	4 (13.3)
Order among siblings		Marital status	
1st	21 (70.0)	Married	30 (100.0)
2nd	3 (10.0)	Race	
3rd	5 (16.7)	Malay	22 (73.3)
4th	1 (3.3)	Chinese	5 (16.7)
Age group during diagnosis		Others	3 (10.0)
≤ 3 years	19 (63.3)	Education level	
> 3 - 5 years	11 (36.7)	Secondary	3 (10.0)
Duration of illness		Tertiary	27 (90.0)
≤ 1 year	15 (50.0)	Monthly household income	
> 1 - 2 years	7 (23.3)	Low (below RM3000)	3 (10.0)
> 2 years	8 (26.7)	Middle (RM3000-5000)	6 (20.0)
Level of ASD SCI		High (Above RM5000)	21 (70.0)
Level 1	9 (30.0)	Work status	
Level 2	17 (56.7)	Homemaker	5 (16.7)
Level 3	4 (13.3)	Working	25 (83.3)
Level of ASD RRB		Type of family	
Level 1	7 (23.3)	Nuclear	27 (90.0)
Level 2	20 (66.7)	Extended	3 (10.0)
Level 3	3 (10.0)	Family members	
Location		Small (≤ 3)	9 (30.0)
Putrajaya	20 (66.7)	Medium (4 – 5)	17 (56.7)
Sarawak	10 (33.3)	Big (≥ 6)	4 (13.3)
		Children in household	
		1	12 (40.0)
		2-3	15 (50.0)
		≥ 4	3 (10.0)

Results Functional Emotional Assessment Scale (FEAS)

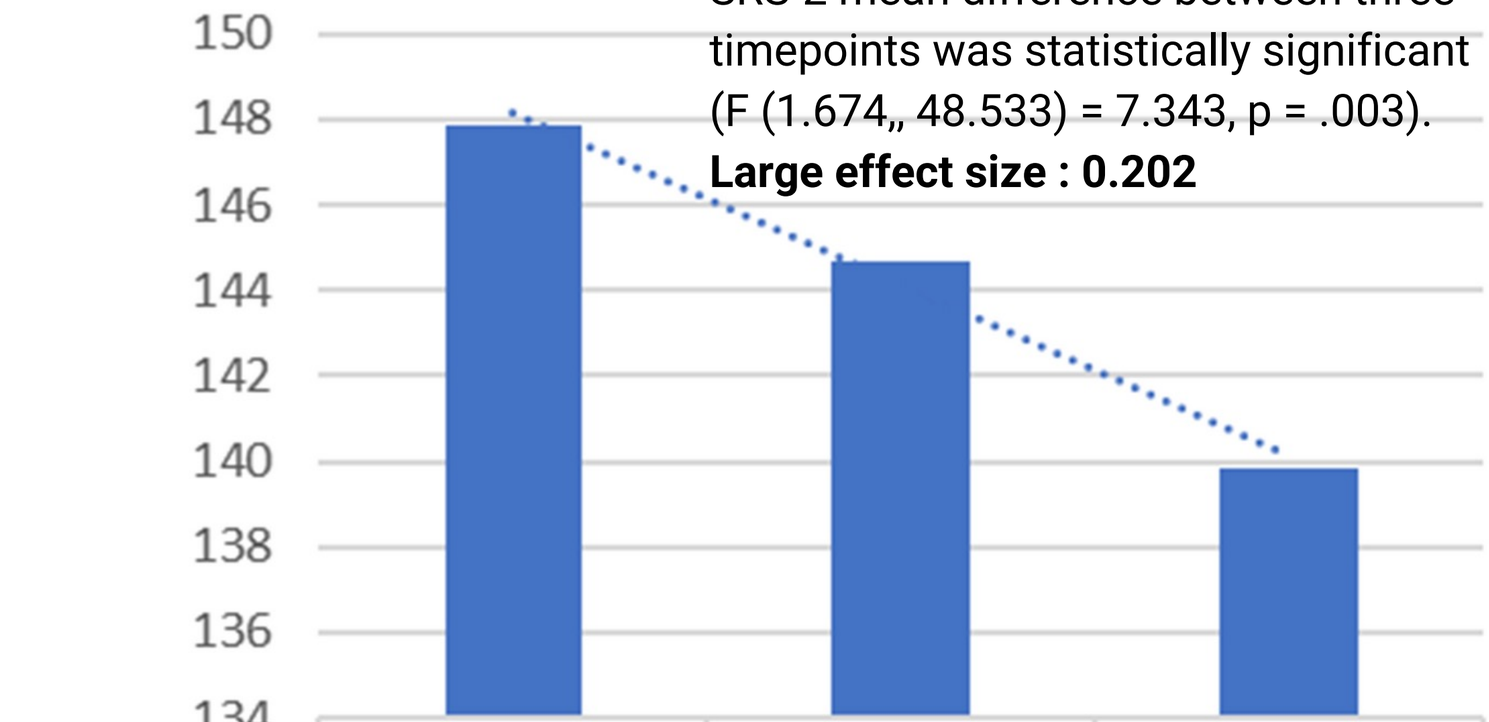
Measures	n (%)
Functional Emotion Subtest 1	
Pre-intervention	
Normal	1 (3.3)
Deficient	29 (96.7)
Mid-intervention	
Normal	11 (36.7)
At risk	2 (6.7)
Deficient	17 (56.7)
Post-intervention	
Normal	19 (63.3)
At risk	2 (6.7)
Deficient	9 (30.0)
Functional Emotion Subtest 2	
Pre-intervention	
Deficient	30 (100.0)
Mid-intervention	
Normal	10 (33.3)
At risk	1 (3.3)
Deficient	19 (63.3)
Post-intervention	
Normal	18 (60.0)
At risk	4 (13.3)
Deficient	8 (26.7)
Functional Emotion Subtest 3	
Pre-intervention	
Deficient	30 (100.0)
Mid-intervention	
Normal	6 (20.0)
At risk	2 (6.7)
Deficient	22 (73.3)
Post-intervention	
Normal	14 (46.7)
At risk	10 (33.3)
Deficient	6 (20.0)
Functional Emotion Subtest 4	
Pre-intervention	
Normal	1 (3.3)
Deficient	29 (96.7)
Mid-intervention	
Normal	7 (23.3)
Deficient	23 (76.7)
Post-intervention	
Normal	12 (40.0)
Deficient	18 (60.0)
Functional Emotion Subtest 5	
Pre-intervention	
Deficient	30 (100.0)
Mid-intervention	
Normal	3 (10.0)
At risk	2 (6.7)
Deficient	25 (83.3)
Post-intervention	
Normal	3 (10.0)
At risk	2 (6.7)
Deficient	25 (83.3)
Functional Emotion Subtest 6	
Pre-intervention	
Deficient	30 (100.0)
Mid-intervention	
Deficient	30 (100.0)
Post-intervention	
Deficient	30 (100.0)
Functional emotion total child's score	
Pre-intervention	
Deficient	30 (100.0)
Mid-intervention	
Normal	2 (6.7)
At risk	3 (10.0)
Deficient	25 (83.3)
Post-intervention	
Normal	2 (6.7)
At risk	5 (16.7)
Deficient	23 (76.7)

Measures	Mean (SD)
Social responsiveness	
Pre-intervention	147.87 (17.20)
Mid-intervention	144.70 (16.70)
Post-intervention	139.83 (20.53)
Parenting competency	
Pre-intervention	63.37 (7.86)
Mid-intervention	64.77 (8.30)
Post-intervention	68.5 (8.41)

Result Social Responsiveness Scale

WFOT Congress 2026
9-12 FEBRUARY BANGKOK, THAILAND
Inspiring **Change**, *Innovating* **Futures**

SRS-2 mean difference between three timepoints was statistically significant (F (1.674,, 48.533) = 7.343, p = .003).
Large effect size : 0.202



	PRE INTERVENTION	MID INTERVENTION	POST INTERVENTION
MEAN (SD)	147.87	144.7	139.83

Bonferroni post hoc test conducted due to significant SRS-2 mean difference

Pre-intervention to mid-intervention (p = .178)
Pre-intervention to post-intervention (p = .011)
Mid-intervention to post-intervention (p = .077)

Social-responsiveness level **significantly improved** from pre-intervention to post-intervention.

Result Parent Sense of Competency

WFOT Congress 2026
9-12 FEBRUARY BANGKOK, THAILAND
Inspiring **Change**, *Innovating* **Futures**

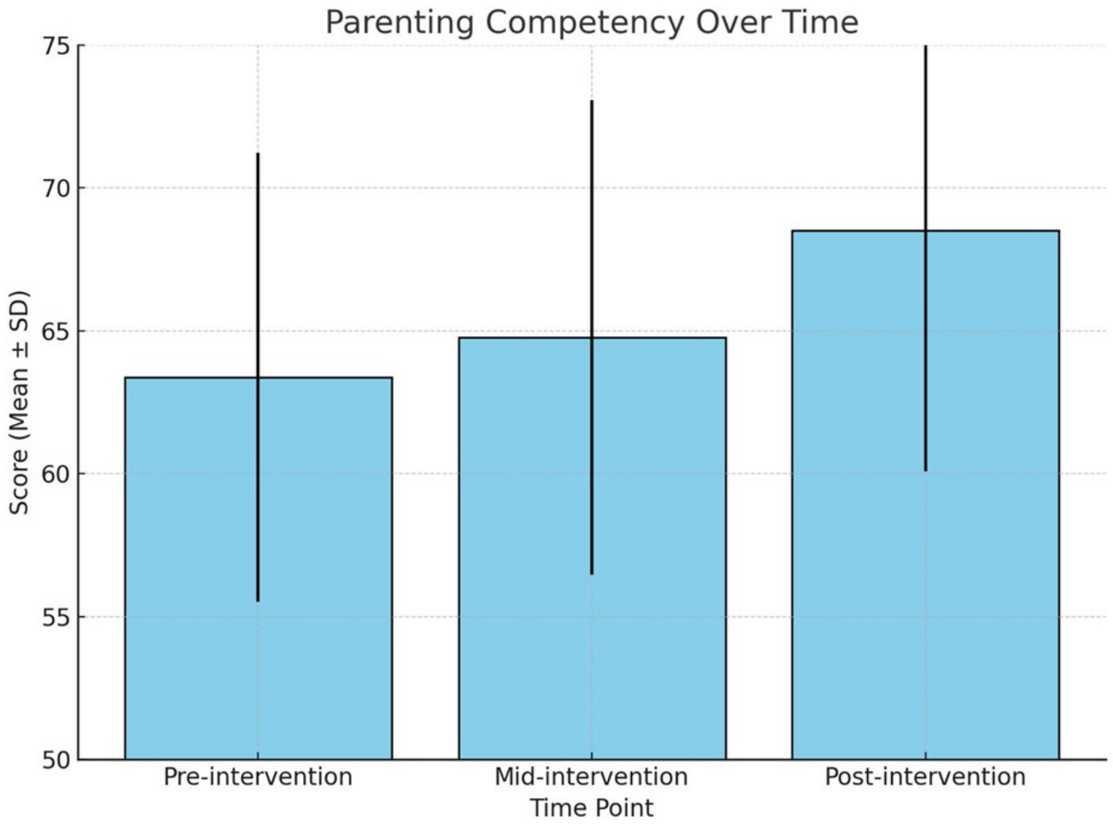
Repeated measure ANOVA:

- PSOC mean difference between three timepoints was statistically significant ($F(1.219,35.342)=23.434$, $p<.001$).
- **Large effect size range: 0.447**

Bonferroni post hoc test conducted due to significant PSOC mean difference.

- Pre-intervention to mid-intervention ($p = .001$).
- Mid-intervention to post-intervention ($p = .001$).

Parenting competency level was **significantly increased** throughout the intervention.



Tests of Within-Subjects Effects

Measures	Correction Method	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Functional emotion	Huynh-Feldt	8192.156	1.613	5079.932	80.483	.000	.735
Social responsiveness	Huynh-Feldt	982.467	1.674	587.058	7.343	.003	.202
Parenting competency	Greenhouse-Geisser	422.489	1.219	346.672	23.434	.000	.447

Tests of Within-Subjects Effects above shows the mean difference in each measure between three timepoints. The mean difference for all three measures were statistically significant with large effect size ranging from 0.202 to 0.735: (i) functional emotion – F (1.613, 46.767) = 80.483, p<.001; (ii) social responsiveness – F (1.674, 48.533) = 7.343, p=.003; and (iii) parenting competency – F (1.219, 35.342) = 23.434, p<.001.

The tests of within-subject effects with interaction with all factors in FEAS, SRS-2 & PSOC; suggesting these **factors influence the outcome of the interventions;**

- **Duration of illness,**
- **Age group,**
- **Level of ASD,**
- **Age Group of primary caregiver**

Table 4.6 Tests of Within-Subject Effects with Interaction

Interacted with Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Measure: FEAS, Correction Method: Huynh-Feldt						
Age Group	1597.122	4.000	399.281	15.916	**.000**	.541
Gender	50.814	1.632	31.143	.490	.578	.017
Order Among Siblings	387.610	5.069	76.471	1.310	.277	.131
Age Group During Diagnosis	14.741	1.664	8.858	.141	.832	.005
Duration of Illness	1766.213	4.000	441.553	20.111	**.000**	.598
Location	902.344	1.750	515.519	12.328	**.000**	.306
Level of ASD SCI	1293.675	4.000	323.419	10.532	**.000**	.438
Level of ASD RRB	677.271	3.903	173.538	4.020	**.007**	.229
Age Group of Primary Caregiver	156.145	3.472	44.972	.754	.543	.053
Gender of Primary Caregiver	70.524	1.621	43.498	.685	.480	.024
Race of Primary Caregiver	241.818	3.312	73.022	1.205	.320	.082
Education of Primary Caregiver	554.684	1.833	302.660	6.479	**.004**	.188
Monthly Household Income	250.400	3.525	71.041	1.251	.302	.085
Work Status	38.698	1.654	23.391	.372	.652	.013
Type of Family	187.030	1.700	110.026	1.894	.167	.063
Family Members	228.057	3.581	63.692	1.130	.351	.077
Children in Household	437.056	3.727	117.273	2.346	.071	.148
Measure: SRS, Correction Method: Huynh-Feldt						
Age Group	63.598	3.630	17.519	.225	.909	.016
Gender	224.147	1.783	125.682	1.717	.193	.058
Order Among Siblings	524.784	5.681	92.379	1.355	.253	.135
Age Group During Diagnosis	136.174	1.760	77.382	1.018	.360	.035
Duration of Illness	30.202	3.612	8.361	.106	.973	.008
Location	20.233	1.739	11.634	.147	.835	.005
Level of ASD SCI	112.993	3.560	31.739	.405	.783	.029
Level of ASD RRB	856.460	3.725	229.941	3.824	**.010**	.221
Age Group of Primary Caregiver	33.269	3.589	9.270	.117	.968	.009
Gender of Primary Caregiver	338.187	1.721	196.541	2.673	.087	.087
Race of Primary Caregiver	931.968	3.804	244.981	4.267	**.005**	.240
Education of Primary Caregiver	815.854	1.781	458.095	7.455	**.002**	.210
Monthly Household Income	284.406	3.613	78.716	1.068	.379	.073
Work Status	208.653	1.779	117.262	1.591	.215	.054
Type of Family	309.089	1.577	196.033	2.423	.111	.080
Family Members	208.758	3.686	56.631	.768	.542	.054
Children in Household	277.833	3.645	76.219	1.041	.392	.072
Measure: PSOC, Correction Method: Greenhouse-Geisser						
Age Group	49.243	2.387	20.634	1.404	.261	.094
Gender	5.185	1.198	4.330	.280	.642	.010
Order Among Siblings	22.889	3.491	6.557	.397	.785	.044
Age Group During Diagnosis	.146	1.218	.120	.008	.957	.000
Duration of Illness	14.575	2.377	6.133	.387	.717	.028
Location	13.511	1.207	11.196	.743	.419	.026
Level of ASD SCI	21.425	2.353	9.104	.577	.594	.041
Level of ASD RRB	23.524	2.426	9.698	.636	.565	.045
Age Group of Primary Caregiver	108.717	2.536	42.876	3.544	**.031**	.208
Gender of Primary Caregiver	2.293	1.218	1.883	.123	.777	.004
Race of Primary Caregiver	40.729	2.444	16.668	1.140	.340	.078
Education of Primary Caregiver	14.696	1.212	12.121	.810	.397	.028
Monthly Household Income	1.241	2.435	.510	.032	.983	.002
Work Status	40.231	1.235	32.582	2.334	.131	.077
Type of Family	2.202	1.219	1.807	.118	.783	.004
Family Members	42.841	2.435	17.596	1.205	.319	.082
Children in Household	21.022	2.401	8.757	.566	.604	.040

DISCUSSIONS

IMPORTANT

Higher implementation dosage

A higher implementation dosage, while remaining feasible compared to conventional approaches, produced significant improvements in children's social–emotional skills and parental competency

Substantial Effects

Early Intervention & Young Age

Parents age 30-40 has stronger emotional regulation, patience, and coping skills, Higher readiness to seek help and learn.

Limitation

Adherence

Unknown adherence of parents to the PMI procedure

Monitoring

The lack of monitoring strategies to examine the fidelity of the intervention

Future Direction

Inspire parents as best play partner to their child through Parent-OT Partnership

Innovating change from conventional to Structured Program

Coucouvanis J, Hallas D. Chapter 16: Autism spectrum disorder. In: Edilma LY, Geraldine SP, Jamesetta AN, editors. Child and Adolescent Behavioral Health: A Resource for Advanced Practice Psychiatric and Primary Care Practitioners in Nursing2021. p. 267-89.

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.

Pajareya K, Nopmaneejumruslers K. A pilot randomised controlled trial of DIR/Floortime™ parent training intervention for pre-school children with autistic spectrum disorders. Autism. 2011;15(5):563-77.

Novak I, Honan I. Effectiveness of paediatric occupational therapy for children with disabilities: A systematic review. Aust Occup Ther J. 2019;66(3):258-73.