THE ENGAGEMENT OF PARENTS OF CHILDREN WITH AUTISM SPECTRUM DISORDER IN THE THERAPY SESSION

Mohd Alwi R[1], Sultan Ibrahim SA[2], and Jasni SH[3].
[1]GENIUS Kurnia Centre, GENIUS Division, Ministry of Education, Jalan Sentul Pasar, Sentul, 51000 Wilayah Persekutuan Kuala Lumpur, Malaysia
[2]Centre For Occupational Therapy Studies, Faculty of Health Sciences, Universiti Teknologi Mara (UiTM), Puncak Alam Campus, 42300 Bandar Puncak Alam, Selangor
[3]Rehabilitation Teaching and Research Unit (RTRU), Department of Medicine, University of Otago, Wellington New Zealand

Correspondence:
Syamsul Anwar Sultan Ibrahim,
Centre for Occupational Therapy Studies,
Faculty of Health Sciences,
Universiti Teknologi Mara (UiTM), Puncak Alam Campus,
42300 Bandar Puncak Alam, Selangor.
Email: syamsul2893@uitm.edu.my

Abstract

Understanding engagement in therapy is crucial for all stakeholders seeking to enhance child abilities through parent participation. Collaboration among stakeholders, including parents, and service providers could significantly impact the development of best practices in paediatric rehabilitation. However, there is a lack of research on parent engagement among children with autism spectrum disorder (ASD), specifically in measuring how parents and children engage during therapy sessions. This study aimed to understand the engagement of parents of children with autism spectrum disorder in therapy sessions. The study used a survey questionnaire namely the Paediatric Rehabilitation Intervention Measure of Engagement-Parent Version (PRIME-P), to identify the level of engagement comprising of affective, cognitive, and behavioural aspects. The study also assessed the probable stress factors influencing parent engagement using the Parental Stress Scale (PSS). One hundred and two (102) parents participated in this study. The data was analyzed for descriptive statistics, a correlation between engagement and parental stress, and regression analysis to determine the best predictor of engagement. The results showed that the levels of affective, cognitive, and behavioural engagement were high and promising, corresponding with a low level of parental stress. The findings contribute to the understanding of parent engagement, highlighting the role of service providers such as occupational therapists (OTs) and special education (SPED) teachers reflecting the most effective intervention approaches for children with ASD.

Keywords*:* Parents*,* Autism Spectrum Disorder, Engagement, Involvement, Therapy

Introduction

Autism spectrum disorder (ASD) is a lifelong disorder characterized by complex developmental conditions with social communication difficulties, restricted and repetitive behaviours, and challenging behaviour (1). The escalating prevalence of ASD demands greater clinical attention in caring for children with ASD. It is estimated that global prevalence of ASD is about 1 in 100 children, and prevalence estimates of autism are essential for informing public policy, raising awareness, and developing research priorities (2). Everyone with ASD varies in the degree of impairment in functioning, and each child with ASD may benefit from treatment and intervention differently. Children with ASD respond best to well-structured and specialized intervention programs (3). Each intervention process and progress is effective with the involvement of their parents and family members in maximizing their abilities and minimizing symptoms. Supporting parents and families with ASD is crucial as parents are the central role and character in every child. Aligned with the recommendations made by the National Research Council, approaches for children with ASD must provide families access to information, ongoing consultation, tailored problem-solving, and the chance to learn how to help their children master new abilities and control challenging behaviours (4). Supporting parents through engagement with their children with ASD is essential to enable each other to become involved, committed, and empowered collaborators in the intervention. Thus, engagement should be given special consideration in intervention of ASD because it will shape how the parent, child, and therapist experience the intervention.

King et al. (5) and later D'Arrigo et al. (6) proposed a new framework on engagement based on affective, cognitive, and behavioural domains, which would benefit

all occupational therapists. First, King et al. (5) described the engagement model using three domains ACB with precursor and out-of-session engagement. The first domain is affective. It describes the therapeutic relationships between the client and therapist. The second domain is cognitive and it is an attitudinal, meaning that the client is committed and willing to invest effort in intervention. The third domain is behaviour. It describes the self-efficacy of the client in-session effectively by sharing problems, discussing plans and goals, as well as taking a role in decision making. Besides the main three domains, the precursor also takes into consideration any engagement antecedents, such as transport problems, parents who have work conflicts, or are overwhelmed, tired, or have family or spouse issues, which would affect parent-child-therapist engagement. Meanwhile, an out-of-session engagement was an addition to the domains created by King et al. (5), which was determined by D'Arrigo et al. (6) as a strategy of intervention done by parents at home towards their children.

Parents and children with ASD enter the intervention or treatment program with several expectations. The expectations are related to the therapy regime, interactions from the therapist, and the outcomes of the therapy. The therapist needs to play the best role so that both parents and children with ASD can view the intervention as valuable, confident to engage in, and there is a greater likelihood they will continue to the intervention or treatment planned. However, there is a lack of studies related to parent engagement among the population with ASD to measure how parents and children engage during intervention sessions. Although it is widely assumed that engagement is necessary for the best outcome between therapist-parent-children, there is surprising that lack of research on how engagement brings works to the therapy process. Identifying parent engagement is important to allow the therapists in modifying strategies as well as provide hope, support, and offering coherence to the intervention plan, and ensure treatment manageability. To emphasize this, therapists play a fundamental and crucial role in using the engagement process by viewing it as a process involving affective, cognitive, and behavioral components. Thus, considering the issues highlighted above, this present study intends to understand the engagement of parents of children with ASD in a state of affective, cognitive, and behavioral involvement in therapy sessions.

Materials and Methods

Design and location of the study

A cross-sectional survey study was conducted at GENIUS Kurnia Centre, GENIUS Division, Ministry of Education in Sentul, Kuala Lumpur. GENIUS Kurnia is an early intervention centre for children with ASD and their families, providing high-quality early intervention and education to prepare children with ASD for mainstream schools. The intervention strategies at GENIUS Kurnia incorporate evidence-based practices and naturalistic teaching, with the cooperation of interdisciplinary groups of occupational therapists, speech therapists, special education teachers, and early childhood teachers, as well as active participation from parents. The study was conducted over a period of approximately 7-8 months.

Sampling

Convenience sampling method was used to recruit 102 participants who met the inclusion criteria: (i) being a parent of a child with ASD aged between 3 and 6 years old, (ii) enrolling in an early intervention and family support program, (iii) attending the program for at least 2 months, (iv) having a child diagnosed with ASD by a psychiatrist or paediatrician, and (v) being able to understand English. Exclusion criteria included parents of children with ASD with multiple disabilities or comorbidities and parents whose attendance for sessions was changeable and inconsistent.

Data collection

The selected parents were gathered after each therapy session and given an explanation of the study's ethical considerations, as well as the need to complete three sections of the research questionnaire: demographic data, the Paediatric Rehabilitation Intervention Measure of Engagement-Parent Version (PRIME-P), and the Parental Stress Scale (PSS). This study included demographic data on parents, children with ASD, and service providers. The demographic information of parents were age, gender, level of education, financial status, and number of children. Meanwhile, age and gender were collected for children with ASD. Additionally, service provider information was collected, including discipline, age, gender, and years in practice. Other demographic information, such as enrolment date, attendance, and session, was also taken into consideration.

Instrumentations

The PRIME-P is a parent- reported measure by King et al. (7) which consists of 11 items that describe parent engagement as a multifaceted construct relating appropriateness of the therapy plan, a sense of active partnership in the intervention process, and an expectation for a positive outcome. The Likert scale items of PRIME-P were divided into three components of engagement which are affective, cognitive, and behaviour with response option of strongly agree, agree, agree a little, neither, with respect to either pole. The response option is scored ± 3 (strongly agree or strongly disagree), ±2 (agree or disagree), ±1 (agree a little or disagree a little) and 0 (neither). The highest total score of 33 was indicating the highest possible rating for an item was +3. The higher the score, the higher the parent rated their own engagement. The PRIME-P scale showed good test-retest reliability and associated ICCs with the highest is 0.92 for the positive outcome expectancy (7).

The Parent Stress Scale was used to measure the levels of stress experienced by the parent of children with ASD in this study. This measure was developed by Berry and Jones (8) which focused on the positive and negative aspects of parenting. The PSS is short and can be finished within about ten minutes. Parents react to items regarding their typical relationship with their child on an 18-item self-report survey. The PSS may be between 18 (low stress) and 90 (high stress). Parents were answering the questions on their typical relationship with their children with ASD. The psychometric properties of reliability and validity of PSS were established and validate across many studies (8).

Data analysis

Data were analyzed using SPSS 26 for descriptive statistics, correlation between engagement and parental stress, and regression analysis to determine the best predictor of engagement. Descriptive analysis was performed to determine the levels of engagement from three areas namely Affective (A), Cognitive (C), and Behavioural (B), as well as parental stress. The relationships between the level of engagement in the therapy session and parental stress among parents of children with ASD were analyzed using Spearman's rho test. The best predictor for engagement was analyzed using linear regression analysis with statistical significance at $p < 0.05$.

Results

Demographic information

A total of n = 102 participants were included in the descriptive analysis. Around two-thirds of the parents were in the age range of 30 to 39 years (66.70%), while only 2 participants (2.0%) were in the age range of 50 to 59. Among the participants, females slightly outnumbered males with 57 (55.90%). Approximately 41.20% of the participants had a degree of education, and 42.20% of them had a middle monthly household income (M40) with income below RM 10,970. Most of the participants (35.30%) worked as professionals. Out of 102 participants, 68 had 5-year-old children with ASD (62.70%), and most of them were male (80.40%). Both parents and children with ASD attended 8 to 16 therapy sessions (60.80%), and they were newly enrolled in the early intervention program at GENIUS Kurnia centre. Moreover, the service providers involved in this study were OTs and SPED teachers, with OTs slightly outnumbering SPEDs teachers (57 (55.90%) vs. 45 (44.10%)). The demographic information is summarized in Table 1.

Level of engagement

The level of engagement and its components (ACB) were described as mean scores with standard deviation (SD) using the PRIME-P. The results are presented in Table 2.

Table 1: Demographic characteristics of the participants

	Variables	**(n = 120) (%)**
Parent's information		
Age (years)		
	20-29	3 (2.90)
	30-39	68 (66.70)
	40-49	29 (28.40)
	50-59	2 (2.00)
Gender		
	Male	45 (44.10)
	Female	57 (55.90)
Education		
	Doctor of Philosophy	1 (1.00)
	Master's degree	8 (7.80)
	Degree	42 (41.20)
	Diploma	27 (26.50)
	Malaysian Certificate of Education (SPM)	24 (23.50)
	High school certificate or less	0 (0.00)
Occupation		
	Professional	36 (35.30)
	Manager	18 (17.60)
	Technician	11 (10.80)
	Clerical worker	11 (10.80)
	Services and sales	10 (9.80)
	Housewife	16 (15.70)
Income		
	B40 (< RM 4850)	41 (40.20)
	M40 (< RM 10970)	43 (42.20)
	T20 (< RM 10971-RM20000)	18 (17.60)
Marital Status		
	Married	98 (96.10)
	Divorced	4 (3.90)
Child's information		
Age (years)		
	4	1(1.00)
	5	64 (62.70)
	6	37 (36.30)
Gender		
	Male	82 (80.40)
	Female	20 (19.60)
Number of Sessions		
	8-16	62 (60.80)
	17-24	30 (29.40)
	25-33	10 (9.80)
Service Provider's Information		
Discipline		
	Occupational Therapist	57 (55.90)
	Special Education Teachers	45 (44.10)

Table 2: Means and standard deviations of PRIME-P

Measure	Mean and SD	Score	n = 102 (%)
PRIME-P			
	Affective, A		
	(Mean = 10.4, SD = 1.58)		
		8	22 (21.60)
		9	10 (9.80)
		10	8 (7.80)
		11	24 (23.50)
		12	38 (37.30)
	Cognitive, C		
	(Mean = 5.14, SD = 0.91)		
		3	2 (2.00)
		4	30 (29.40)
		5	22 (21.60)
		6	48 (47.10)
	Behaviour, B		
	(Mean = 4.68, SD = 0.99)		
		3	11 (10.80)
		4	39 (38.20)
		5	24 (23.50)
		6	28 (27.50)
	General		
	(Mean = 7.51, SD = 1.43)		
		5	2 (2.00)
		6	40 (39.20)
		7	9 (8.80)
		8	6 (5.90)
		9	45 (44.10)
	Total PRIME-P		
	(Mean = 27.77, SD = 4.10)		
		21	3 (2.90)
		22	17 (16.70)
		23	4 (3.90)
		24	5(4.90)
		25	6(5.90)
		26	3(2.90)
		27	6(5.90)
		28	9(8.80)
		29	5 (4.90)
		30	12(11.80)
		31	6(5.90)
		32	7(6.90)
		33	19 (18.6)

A total of 102 participants were included in the data analysis. The total score of PRIME-P was 33, with a mean total score of 27.77 (SD = 4.10). The range of scores was 21 to 33, with 19 participants scoring the highest possible score of 33. The mean score for the affective component was 10.4 (SD = 1.58), for the cognitive component was 5.14 (SD = 0.91), for the behaviour component was 4.68 (SD = 0.99), and for the general component was 7.51 (SD = 1.43). The results show that almost half of the participants scored highest on the cognitive component (48 or 47.10%) and the general component (45 or 44.10%) of engagement. One-third of the participants scored high on the affective component of engagement (38 or 37.30%), while the lowest percentage was for the behaviour component (28 or 27.50%) on the highest score.

Level of parental stress

A total of n = 102 were included in the data analysis. The total score of Parental Stress Scale (PSS) was 90, which indicates a high stress score. The score ranged from 18 (low stress) to 90 (high stress), and parents answered questions about their typical relationship with their children with ASD. The mean total score of PSS of the 102 participants was 40.91 (SD = 8.14). Participants' scores ranged from 25 to 59 of the highest score, indicating lower parental stress levels of parents of children with ASD at GENIUS Kurnia. Table 3 shows the mean and standard deviation of the PSS scores.

Table 3: Means and standard deviations of PSS

Measure	Mean and SD	Score	N (%)
PSS			
	Total PSS		
	(Mean = 40.91, SD = 8.14)		
		25	2 (2.0)
		26	2 (2.0)
		27	1 (1.0)
		28	2 (2.0)
		30	5 (4.9)
		31	1 (1.0)
		32	1 (1.0)
		33	6 (5.9)
		34	3 (2.9)
		35	1 (1.0)
		36	6 (5.9)
		37	8 (7.8)
		38	2 (2.0)
		39	7 (6.9)
		40	5 (4.9)
		41	5 (4.9)
		42	5 (4.9)
		43	6 (5.9)

Table 3: Means and standard deviations of PSS (continued)

Measure	Mean and SD	Score	N (%)
		44	2 (2.0)
		45	4 (3.9)
		46	1 (1.0)
		47	4 (3.9)
		48	3 (2.9)
		49	5 (4.9)
		50	2 (2.0)
		52	3 (2.9)
		53	2 (2.0)
		56	6 (5.9)
		58	1 (1.0)
		59	1 (1.0)
	Total		102(100.0)

Relationships between the level of engagement and parental stress

The results of Spearman's rho test indicated a negative correlation between total engagement and parental stress, with a correlation coefficient of -0.20 and a p-value of less than 0.04 (two-tailed), based on a sample size of N = 102. The detailed results can be found in Table 4.

Table 4: Spearman's rho test

			Total Engagement	Total PSS
Spearman's rho	Total Engagement	Correlation Coefficient	1.00	-0.20
		P value		0.04
		N	102	102
	Total PSS			
		Correlation Coefficient	-0.20	1.00
		P value	0.04	
		N	102	102

Best predictor for level of engagement

A standard multiple regression analysis was conducted to examine the linear relationship between the total engagement score and demographic information. The demographic information, including parent age, gender, marital status, level of education, income, occupation, number of therapy sessions, and service provider, were treated as independent variables. Prior to interpreting the results of the multiple regression, the assumptions were evaluated. First, stem-and-leaf plots and boxplots were used to assess whether each variable in the regression was normally distributed and free from univariate outliers. Second, the normal probability plot of standardized residuals and the scatterplot of standardized residuals against standardized predicted values were inspected to ensure the assumptions of normality, linearity, and homoscedasticity of residuals were met. These plots can be seen in Figure 1 and 2.

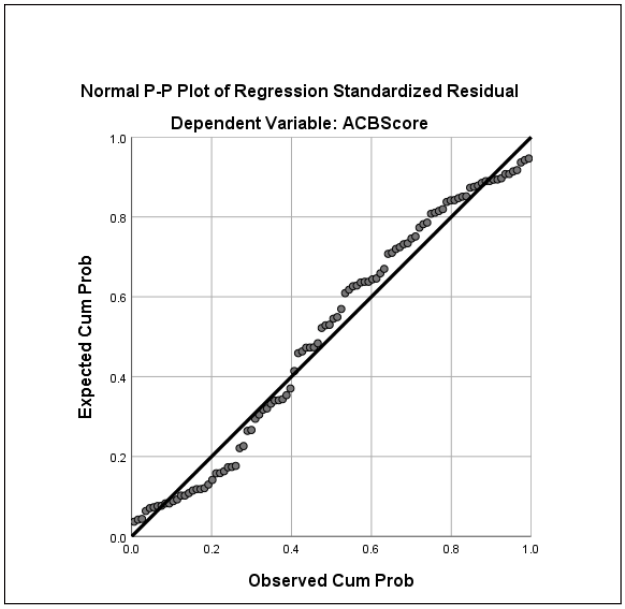

Figure 1: Normal P-P Plot of Regression.

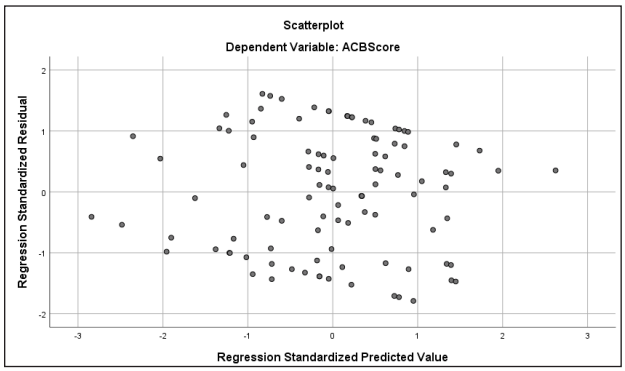

Figure 2: Scatter Plot of Total Engagement and Demographic Information.

The assumptions of normality, linearity, and homoscedasticity of residuals were met, but the ANOVA was not significant ($p > 0.05$) with a value of 0.12, indicating that R2 did not significantly depart from zero. This means that the demographic data, when combined, could not explain any more variance in total engagement score than expected by chance. The results of the multiple regression

were f = 1.6, df (8) = 213.98, df (93) = 1485.83, and p = 0.12, and they are presented in Table 5.

Table 5: Multiple regression of engagement and demographic information

	Sum of Square	df	Mean Square	F	P value	f^2 effect size
Regression	213.983	8	26.75	1.67	0.12	0.14
Residual	1485.830	93	15.97			
Total	1699.814					

However, it is worth noting that out of the 8 demographic variables included in the analysis, the service provider variable (OTs & SPED Teachers) was found to be a significant predictor of engagement, with a p-value less than 0.05 (0.032). This result is presented in Table 6.

Table 6: Predictor of demographic information

Predictor	b	beta	t	P
Parent gender	0.48	0.06	0.57	0.57
Education	0.41	0.09	0.79	0.43
Occupation	-0.49	-0.22	-1.94	0.05
Marital status	-2.39	-0.11	-1.11	0.27
OT &Teacher	1.78	0.22	2.18	0.03
Income	-1.13	-0.20	-1.55	0.12
Age group	-0.16	-0.03	-0.26	0.79
No. of session	-0.82	-0.11	-1.08	0.28

Discussion

Level of engagement among parents of children with ASD in the therapy sessions

The findings of this study revealed that parents of children with ASD at GENIUS Kurnia centre had a high total score of engagement. The mean total score of engagement of parent participants indicated the effectiveness of engagement among parents, service providers, and children. This finding is consistent with previous descriptions of engagement, where researchers describe engagement as a multifaceted state of affective, cognitive, and behavioural commitment of the client role over the intervention process (5). The achievement of this outcome reflected the service delivery at GENIUS Kurnia centre, which is conceptualized as an interdisciplinary approach for ASD, regarded as the Centre of Excellence for ASD in Malaysia. The approach practices evidence-based strategies such as behavioural intervention, parent-mediated intervention, communication, and social skill intervention, which follow the core deficit described in DSM-5 of individuals with ASD.

Regarding the engagement outcomes of this study, it was shown that the most practised intervention in early intervention programs at GENIUS Kurnia was parent-mediated intervention, which was successful. The act of involving parents in the session was considered a core intervention need and process that led to effective progress in maximizing the abilities of parents and children with ASD. According to Dawson et al. (9), parent involvement and intense early intervention can have a significant impact on outcomes for children with ASD. This was also explained by the study of Wallace and Rogers (10), which highlighted that one of the most important components in assisting children with ASD is parent involvement in intervention, particularly ongoing parent coaching that emphasizes parental responsibility and sensitivity to child needs.

Level of parental stress among parents of children with ASD in the therapy sessions

Finding from this study revealed that the level of parental stress among parents of children with ASD at GENIUS Kurnia was low. The mean score of the PSS was average, indicating a reliable state. This result can be attributed to the high level of engagement found in this study, suggesting that dynamic parental involvement and engagement with children with ASD can have a positive impact on reducing stress levels for both the child and the parent. The therapist's role in setting clear expectations and boundaries, providing structure and routine, and fostering open communication and understanding is essential for promoting engagement. Importantly, involving parents in the child's therapy and educational plans at GENIUS Kurnia improved outcomes for the child and reduced stress for the family.

This finding is consistent with the study by Estes et al. (11), which reviewed the effects of intervention for children with ASD on parent stress and wellbeing. The review suggested that early ASD intervention, including early intensive behavioral programs, parent-mediated intervention, and programs that specifically addressed parent stress issues, had a direct impact on parent well-being and family adaptive functioning. Similarly, the study by Mueller & Moskowitz (12) on the impact of positive family intervention on parent stress and cognition of parents of children with ASD showed that mothers of children with ASD reported improved stress levels and increased self-efficacy in the post-parent training program and positive family intervention program.

Relationships between level of engagement and parental stress

Finding results showed that there was a negative correlation between the level of engagement and parental stress among parents of children with ASD in GENIUS Kurnia. This suggests that stress was not a factor influencing engagement. Therefore, it is not surprising that there was a low level of parental stress linked to the high level of engagement in this study. The quality of engagement

appeared to be linked with the best services provided by the center. There is evidence to suggest that higher levels of engagement in therapy sessions can lead to lower levels of parental stress among parents of children with ASD (13-16). Studies have shown that when parents are more involved in their child's therapy and can see progress being made, they tend to feel less stressed and more confident in their ability to care for their child (17). Additionally, when parents feel that they have a good understanding of their child's condition and the therapy process, they tend to feel more in control and less stressed. On the other hand, when parents feel that they are not involved enough in their child's therapy or that they do not understand the therapy process, they may experience higher levels of stress. It is important to emphasize that there is a full advantage of having parents during sessions in current practice, and in return, allowing and encouraging their involvement and engagement in sessions and outside of sessions for the benefit of the children, parents, and families. This is aligned with the studies of Leadbitter et al. (18) and Rojas-Torres et al. (19), which provide evidence of the effectiveness of intervention programs with the involvement of parents in sessions and acting as mediators for their children.

Predictor of engagement

Finding revealed that the best predictor of engagement was the service provider at GENIUS Kurnia. This indicates that the service and service provider factors influence engagement. A range of service and service provider characteristics were anticipated to influence parents of children with ASD. The nature of services provided at GENIUS Kurnia aimed to influence parent and child engagement through evidence-based intervention strategies, naturalistic teaching, and cooperation between interdisciplinary groups of OTs, speech therapists, SPED teachers, and early childhood teachers. Parents and children with ASD who enrolled in the early intervention program at GENIUS Kurnia received the same service from either OTs or SPED teachers. However, the service provider's characteristics could influence the level of engagement.

Relating to the previous study, the level of engagement was explained in relation to the connection process between clients and service providers or services (20). Study by Bright et al. (20) pointed out that the condition of engagement was collaboration between the client and service provider, approach to care, co-establishment of priorities, treatment cooperation, and compliance. Their study also listed service provider characteristics as contributing factors for better engagement. For instance, the service provider should have trust, empathy, the ability to create a climate of engagement, co-establish priorities, understand the client's perspective, make information meaningful, be caring, actively listen, and be persistent. Consistent with the findings of D'Arrigo et al. (21), the findings of qualitative research on the engaged child in OT explain that service and therapist factors influence child engagement and the parent-therapist relationship, therapist responsiveness, and the parent's feelings of support were also explained in the study of parent engagement and disengagement in paediatric practice (22). Thus, it can be postulated that intervention approaches mandated by the service and applied by an interprofessional team are perceived to be influenced by the service provider's characteristics. Despite the fact that both service providers of OT and SPED teachers work best as an interprofessional team approach for the client, which facilitates optimal engagement for parents and children with ASD.

The study had several limitations. It focused solely on identifying engagement in one ASD center, and thus, these perspectives can only represent inferences regarding the same sample. The sample may not be representative of the larger population of parents of children with ASD, and the findings may not be generalizable to other groups or settings. Additionally, it may not consider other factors that might affect engagement, such as socioeconomic status, cultural background, or access to therapy services. Another limitation is that it may not be able to capture the full range of engagement among all parents of children with ASD, particularly those who are older. The engagement and coping strategies of older parents may differ from younger parents, and a study that only focuses on young parents may not be able to detect these differences. Therefore, this study is not able to fully capture the complexities of engagement, as engagement can vary depending on the specific context or task. For example, a parent may be highly engaged in one therapy session but less engaged in another, and the study may not be able to capture the full extent of the parent's engagement. Additionally, young parents may have different life experiences and resources than older parents, which can affect their level of engagement. Therefore, it would be beneficial to include a diverse sample of parents from different age groups, cultures, and socioeconomic statuses to have more generalizable results.

Additionally, this study of engagement among parents of children with ASD could be considered limited by time constraints. This study only lasted for months, and it may not be able to detect changes in engagement that occur over a longer period. Furthermore, this study only assessed engagement at certain intervals, and it could miss important fluctuations that occur between those intervals. Another limitation is that engagement can vary depending on the specific context or task, and a study that only looks at engagement over a short period of time may not capture the full extent of the parent's engagement.

Furthermore, a time-constrained study may not be able to fully capture the changes that might occur during different stages of the child's development. It is essential to consider the child's age and developmental stage in understanding the parent's engagement. Therefore, it would be beneficial to have a longitudinal study that tracks the level of engagement over a longer period to have a more comprehensive understanding of the subject. Additionally, other methods of study, such as interviewing

participants, should be carried out to better target engagement experiences.

Conclusion

This study aimed to identify the level of engagement of parents of children with ASD in affective, cognitive, and behavioral involvement and participation, as well as the factors influencing engagement. The study involved 102 participants, parents of children with ASD in GENIUS Kurnia. The findings showed a significant high level of engagement among parents in the center. Furthermore, the study revealed that parents of children with ASD do not experience a high level of parental stress, which can be attributed to the effective intervention approaches provided at GENIUS Kurnia.

The study's results suggest that GENIUS Kurnia center is a leading provider of effective intervention approaches that increase parental engagement in children with ASD. These approaches may include parent education programs and support groups that provide a connection with children, parents, service providers, and services. The study's results indicate the importance of ongoing support for parents of children with disabilities, especially in Malaysia, to ensure that parents can continue to be engaged in their child's care and development. This will ultimately improve services and change possible policies by the Ministry of Health and Ministry of Education in Malaysia.

In conclusion, this study provides a pathway for further understanding the essential role of parental engagement in children's lives, particularly children with ASD. The findings highlight the need for ongoing support for parents of children with ASD and indicate the significant impact that effective intervention approaches can have on parental engagement. This study's results offer valuable insights for healthcare providers, policymakers, and educators, emphasizing the importance of parental engagement in children's overall well-being and development.

To further advance the understanding of parental engagement in children with ASD, it is recommended that future research employ a longitudinal design, recruit a diverse sample of parents, use multiple assessment methods, consider the child's developmental stage, control for other factors that might affect engagement, collaborate with professionals, and conduct multicentre studies to ensure generalizability. These recommendations could provide a more comprehensive understanding of parental engagement in children with ASD and improve support services for families.

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Conflict of interest

The authors declare that they have no competing interests.

Ethical clearance

This study was granted ethical approval from both the Universiti Teknologi MARA (UiTM) Ethics Committee (Ref: FERC/FSK/MR/2022/0186) and GENIUS Kurnia Centre (Ref: KURNIA 600-8/2/2 Jld. 4 (17).

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