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Research Article:

A Literature Review of Theoretical Perspectives Toward Parent-Mediated Behavioural Intervention for Autistic Children

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ABSTRACT

Autistic children exhibit disabilities in social interaction and communication along with the presence of repetitive, restricted and stereotyped behaviours. Autistic person demonstrates high rates of developing challenging behaviours that result in social rejection, exclusion from community settings, emotional distress and limitation to access to quality education settings. Articles that review parent-mediated behavioural intervention in managing challenging behaviours of autistic children at home settings are scarce. Hence, this literature review aims to provide insights into the theoretical perspectives that supported the behavioural intervention implemented by parents to manage the challenging behaviours of autistic children. Published articles between 2008 and 2023 were retrieved from an extensive database search. Six articles met the inclusion criteria. Five themes emerged from the review with regards to theoretical perspective toward parent-mediated behavioural intervention: (1) Parents' characteristics, mindset and mental health; (2) Parents practice of the scaffolding teaching method; (3) Parents practice of the behavioural modification techniques; (4) Parent-child secure attachment relationship; and (5) Parents acting as behaviour change agents. The findings emphasise that parents are considered the primary intervention agents and highlight the importance of parental involvement in facilitating parent-mediated behavioural intervention to support their child's learning and development. To conclude, this review suggests cost-effective parent-mediated behavioural intervention training to be developed to include supporting the mindfulness of parents, in addition to target intervention for autistic children as part of a comprehensive intervention programme for both parents and children.

Keywords: Theoretical perspective, challenging behaviours, autistic children, parent-mediated behavioural intervention, literature review

INTRODUCTION

Autism is a lifelong neurodevelopmental disability (Dahiya et al., 2021) that is characterised by disabilities in social communication and interaction, restricted repetitive behaviours (RRB), interests and activities (Nuta et al., 2021; Parladé et al., 2019). It is estimated that approximately 1 in 100 children has been diagnosed with autism worldwide (World Health Organization [WHO], 2022; Zeidan et al., 2022). Recent reports by the Centres for Disease Control and Prevention (CDC) estimated 1 in 36 children in the United States are diagnosed with autism (Maenner et al., 2023). Autism, therefore, continues to be a growing public health concern. Salari et al. (2022) conducted a systematic review and meta-analysis from 2008 to July 2021 of an overall estimate of the global prevalence of ASD. The results of the systematic review reported that the prevalence of ASD in the world was 0.6% (95% confidence interval (CI): 0.4%–1%), whereas the subgroup analyses indicated that the prevalence of ASD in Europe was 0.5% (95% CI: 0.2%–1%) (Salari et al., 2022). Additionally, the National Observatory for ASD, coordinated by the National Institute of Health, conducted a study to estimate the prevalence rate of ASD in Italian children aged 7–9 years. The result of the study revealed that the estimated prevalence of ASD in Italy was 13.4 (11.3–16.0) per 1,000 children aged 7–9 years, with a male-to-female ratio of 4.4:1 (Scattoni et al., 2023).

Children diagnosed with autism might display challenging behaviours including aggression, tantrums, self-injurious behaviour (SIB), property destruction, eating inedible items, disruptive or persistent screaming, hyper- or hypo-sensitivity to stimuli, non-compliance with routine demands or daily tasks and repetitive patterns of behaviour or motor stereotypes (Edwards et al., 2019; Nuta et al., 2021; Pennefather et al., 2018). Almost 95% of autistic children emit at least one form of challenging behaviours since repetitive or stereotyped behaviours are incorporated in the interpretation of challenging behaviours (Argumedes et al., 2021; Jang et al., 2011). The challenging behaviours potentially negatively impact numerous aspects of quality of life for autistic children, such as exposing them to health-related risks, social rejection and exclusion from community settings, restricting them from accessing community services leading to interference in participation in social activities and social integration, emotional distress, and present major barriers or limitations to the children's learning and education opportunities as well as expose their peers to injury risks and disruptions (Argumedes et al., 2021; Matheis & Estabillo, 2017). If left untreated, challenging behaviours tend to persist to the point that they lead to potentially detrimental development for autistic children (Turgeon et al., 2021), causing interference in core areas such as language, communication, social relationship skills development, academic achievement, besides preventing the acquisition of adaptive behaviours required for daily living (Argumedes et al., 2021; Edwards et al., 2019; Gardiner & Iarocci, 2015).

The presence of challenging behaviours has also been associated with lower family Quality of Life (QoL) and an increase in parental stress (Soke et al., 2016; Gardiner & Iarocci, 2015; Giovagnoli et al., 2015). Challenging behaviours by autistic children commonly

occur in the home (Lecavalier et al., 2006; Baker et al., 2003), requiring parents to adapt routines to avoid repeated occurrences of challenging behaviours (Nuta et al., 2021; Fox et al., 2002). Therefore, parents are often the primary interventionists or pivotal behaviour change agents (Crowell et al., 2019; Kuravackel et al., 2018) in implementing a parent-mediated intervention in a naturalistic home setting to teach essential skills to their autistic children (Conrad et al., 2021).

Parent-Mediated Intervention

Parent-mediated intervention (PMI) is an approach in which a professional provides parents with the knowledge and skills, in particular through a mix of teaching and coaching techniques designed to support their implementation of evidence-based strategies in the home environment, which directly fosters their children's learning and development (Tomeny et al., 2019). The PMI approach is a time and the cost-effective home-based programme that showed promising sustainable effects and is found to have positive outcomes for autistic children (Shalev et al., 2020), including in their cognitive abilities, behaviours and social communication (Shalev et.al, 2020). Training and coaching parents in PMI by empowering and strengthening parents' ability to enhance autistic children to receive a greater amount of time exposure to therapeutic techniques intervention compared to typical intervention sessions delivered by professionals in a clinical setting (Blake et al., 2017; Wainer & Ingersoll, 2013). This is because parents who administer the intervention are normally able to maintain and generalise the use of learned methods to be applied in the child's natural environment or various contexts (Blake et al., 2017; Wainer & Ingersoll, 2013). An important component of autism interventions includes evidence-based behavioural interventions for autism (Oono et al., 2013) and parental involvement whereby behavioural interventions are delivery in the naturalistic environment (Schreibman et al., 2015). Parental involvement in autism intervention incorporates various stages, for instance readiness, motivation for engagement and actual engagement in the child's intervention process whereby parents adjust themselves emotionally and are enthusiastic to work towards the sustainable long-term needs of their autistic child (Gentles et al., 2019).

Several empirical studies revealed that autistic children who are involved in parent-mediated behavioural intervention gain positive outcomes evidenced by a decrease in the child's challenging behaviours (Argumedes et al., 2021; Dahiya et al., 2021; Turgeon et al., 2021; Nuta et al., 2021; Mueller & Moskovitz, 2020; Edwards et al., 2019; Parladé et al., 2019; Pennefather et al., 2018; Bello-Mojeed et al., 2016; Masse et al., 2016) as well as improvements in the child's compliance, social responsiveness and prosocial behaviours in various learning environments (Argumedes et al., 2021; Parladé et al., 2019; Matthews et al., 2018; Pennefather et al., 2018; Masse et al., 2016). For instance, Bello-Mojeed et al. (2016) conducted parent-mediated behavioural intervention training sessions with parents of autistic children, whereby their findings indicated a statistically significant reduction in autistic children's aggressive behaviours and self-injurious behaviours, as well

as a significant increase in mothers' levels of knowledge of autism and functional behaviour assessment. The goals and procedures probably are more socially valid and generalisable because the home is the most natural place for both parents and autistic children (Lee & Meadan, 2020). Therefore, shifting the focus from interventions delivered by professionals in clinical settings to naturalistic interventions delivered by natural change agents, such as parents, within home settings requires training and coaching parents to effectively deliver interventions to their children (Meadan et al., 2020).

Existing article reviews reported on parent-mediated play-based intervention or music-based intervention to support and improve joint attention, social communication and language skills development in autistic children (Deniz et al., 2022; Pacia et al., 2022; Gibson et al., 2021; Hernandez-Ruiz, 2020). However, articles that review parent-mediated behavioural intervention in managing challenging behaviours of autistic children in home settings are scarce. Moreover, existing article reviews summarised the essential elements of parent training for challenging behaviours in autistic children (Postorino et al., 2017) and outlined autistic child and parent outcomes following behavioural parent interventions for disruptive and hyperactive behaviours in autistic children (Tarver et al., 2019). Nevertheless, rarely found articles that review theories as core facilitators in leading and promoting parents as crucial factors in carrying out parent-mediated behavioural intervention. Therefore, this narrative literature review aims to explore the types of theories adopted in parent-mediated behavioural intervention, and the role of theories in facilitating the behavioural intervention implemented by parents to manage challenging behaviours of autistic children. This review is essential in providing insights into the central role of theories in supporting and guiding the implementation of parent-mediated behavioural intervention.

Importance of Theoretical Perspective

As stated by Boss et al. (1993, p. 20), "theorizing is the process of systematically formulating and organising ideas to understand a particular phenomenon whereby a theory is the set of interconnected ideas that emerge from the process." In other words, theories are thus formulated to explain, predict and understand phenomena to challenge and extend existing knowledge by providing new insights into ways of understanding a phenomenon (Turner et al., 2018). Theories are put into practice to help to "understand, explain, anticipate, know, and act" upon a particular object or subject (Lynham, 2002, p. 222) in particular surroundings or environment. Therefore, theories increase the utility, rigour and credibility of research findings and facilitate the development of new concepts and their generalisability or transferability. Social support theory suggests that supporting individuals in distress with necessary information, emotions and knowledge can promote sustainable positive development for the individuals (Wong & Shorey, 2022), whereby parent-mediated intervention is viewed as a crucial support for families of autistic children to enhance the quality of life and sustainability well-being of autistic children and their families (Kuhlthau et al., 2014). Bronfenbrenner's ecological systems theory describes

parents at the microsystem level play a pivotal role in the early intervention provided to autistic children (Acar et al., 2021) by empowering families with coaching parents through parent-mediated behavioural intervention to enhance improvement in autistic children's growth, learning and development in various aspects of social-emotional, behavioural responsiveness, language and physical motor skills (Stahmer & Pellecchia, 2015). Comprehensive interventions involve a combination of principles of behavioural and developmental theories as foundations in directing and guiding the intervention to promote positive developmental domain outcomes in autistic children (Oono et al., 2013). In this current review article, it is critical to review the literature on the theoretical perspectives toward parent-mediated behavioural intervention aimed at ameliorating challenging behaviours in autistic children.

AIM

This literature review aims to summarise applicable theories employed in parent-mediated behavioural interventions. Further, it is imperative to understand the roles of theories as fundamental facilitators in directing parent-mediated behavioural intervention in home settings. In contrast to interventions administered by therapists in clinical settings, parent-mediated behavioural interventions occur in naturalistic settings of the home or community. The critical aspect of attachment within the parent-child relationship also differs from the limited contact between a therapist and a child. Furthermore, parents often do not have expertise in theories of learning and behavioural change, nor the self-efficacy for implementing interventions with their child (Crowell et al., 2019; Steiner et al., 2012). Therefore, understanding the role of theory within parent-mediated behavioural intervention to address these factors can advance understanding of effective practices specific to parent-mediated behavioural interventions and recognise how theories underpin and direct the implementation of parent-mediated behavioural interventions.

METHODS

Literature reviews connect knowledge in which the research is disparate and interdisciplinary, synthesise research findings by providing evidence of an effect, create guidelines for policy and practice, and have the capacity to advance disciplinary knowledge and facilitate theory development (Kraus et al., 2022; Snyder, 2019). In this article, a critical literature review was conducted to map theoretical approaches in parent-mediated behavioural intervention aimed at ameliorating challenging behaviours in autistic children. The aims of the review are addressed by adopting Arksey and O'Malley (2005) methodology with the following stages:

1. Identifying the research question.

2. Formulating a search strategy.

3. Devising the study selection.

4. Data extraction.

5. Collating, summarising and reporting the results.

Stage 1: Identifying the Research Questions

The research questions for this critical literature review were as follows: (1) What theories are adopted in parent-mediated behavioural intervention focused on autistic children who exhibit challenging behaviours? (2) What are the roles of theories in facilitating parent-mediated behavioural intervention for autistic children who exhibit challenging behaviours?

Stage 2: Formulating a Search Strategy

A comprehensive search was conducted on 3 April 2023 involving three databases: Scopus, Navigation Search Engine of EBSCOhost for Education Resources Information Center (ERIC) and SAGE Publication. The electronic databases of Scopus and Navigation Search Engine of EBSCOhost for ERIC were used as principal search systems because they provided a systematic search context with high levels of coverage, recall, precision and reproducibility (Gusenbauer & Haddaway, 2020). The search system of Scopus was a large and multidisciplinary database (Gusenbauer & Haddaway, 2020), whereas SAGE was an A/B-rated journal platform ranked in the WASS-SENSE ranking 2020 (Gusenbauer, 2022). Keyword terms were selected using the mnemonics Population (P), Intervention (I), Comparison (C) and Outcome (O) (Methley et al., 2014). The connector and keywords included (TITLE-ABS-KEY ("autistic children" OR "children with autism" OR "ASD" OR "autism spectrum disorder" OR "parent of autistic children" OR "neurodevelopmental disorder") AND TITLE-ABS-KEY ("parent mediated behavior intervention" OR "parent mediated intervention" OR "family mediated intervention" OR "caregiver mediated intervention" OR "behavioral intervention" OR "parental involvement intervention" OR "intervention" OR "parent involvement" OR "parent implemented intervention" OR "parent implemented behavioral intervention") AND TITLE-ABS-KEY ("Theoretical perspective" OR "theory" OR "theories" OR "theoretical" OR "theoretical framework" OR "theoretical implication" OR "theoretical point of view" OR "theoretical viewpoint" OR "theoretical approach" OR "theoretical relationship" OR "theoretical guideline") AND TITLE-ABS KEY ("Influence" OR "guidance" OR "crucial" OR "supreme" OR "roles" OR "impact" OR "effect" OR "direction" OR "support" OR "positive" OR "significant role" OR "principal role" OR "important role" OR "pivotal role" OR "supportive role" OR "foremost role" OR "roles of theory" OR "guide" OR "impacts of theory"). From this search process, 1,116 articles were collected.

Stage 3: Devising the Study Selection

Autistic children in this review article were defined as individuals between 3–10 years of age. The age limit was included as the inclusion criteria in the search strategy, which included preschool age of 3–5 years old until early elementary school age of 6–10 years old (Gao & Drani, 2024; Pilika et al., 2017). Articles were evaluated based on the following inclusion criteria:

1. Participants include at least one parent of a child aged 3–10 years old with a formal diagnosis of autism;

2. Study of parent-mediated behavioural intervention;

3. Includes theoretical perspectives;

4. Describes the importance roles of theories and their guides;

5. Primary or original qualitative, quantitative or mixed methods research; and

6. Published between January 2008 and April 2023 in an English-language peer-reviewed journal.

The exclusion criteria for articles include:

1. Autistic person younger or older than 3–10 years old or individuals without an autism diagnosis.

2. Clinician-mediated intervention, therapist-mediated intervention, peer-mediated intervention, specialist-mediated intervention, pharmacotherapy interventions, social interaction, speech, language and communication interventions.

3. Conceptual perspectives, model.

4. Studies that do not include theoretical perspectives.

5. Grey literature and those without the full text available.

6. Studies not published in English or those published outside of the timeframe selected.

The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) flow diagram in Figure 1 demonstrates the process from identification until the inclusion of studies (Moher et al., 2009). The relevant articles from the identified data sources were further reviewed by screening procedure from the titles and abstracts as well as reviewing full-text articles based on the inclusion and exclusion criteria. The researchers continuously defined (and refined) the inclusion criteria based on increasing familiarity

with the literature (Arksey & O'Malley, 2005). The manual process of hand-searching techniques by checking the reference lists of journal articles that yielded five further studies. Finally, 54 studies were assessed for eligibility based on the full-text articles. Six articles that met all the inclusion criteria were included for analysis.
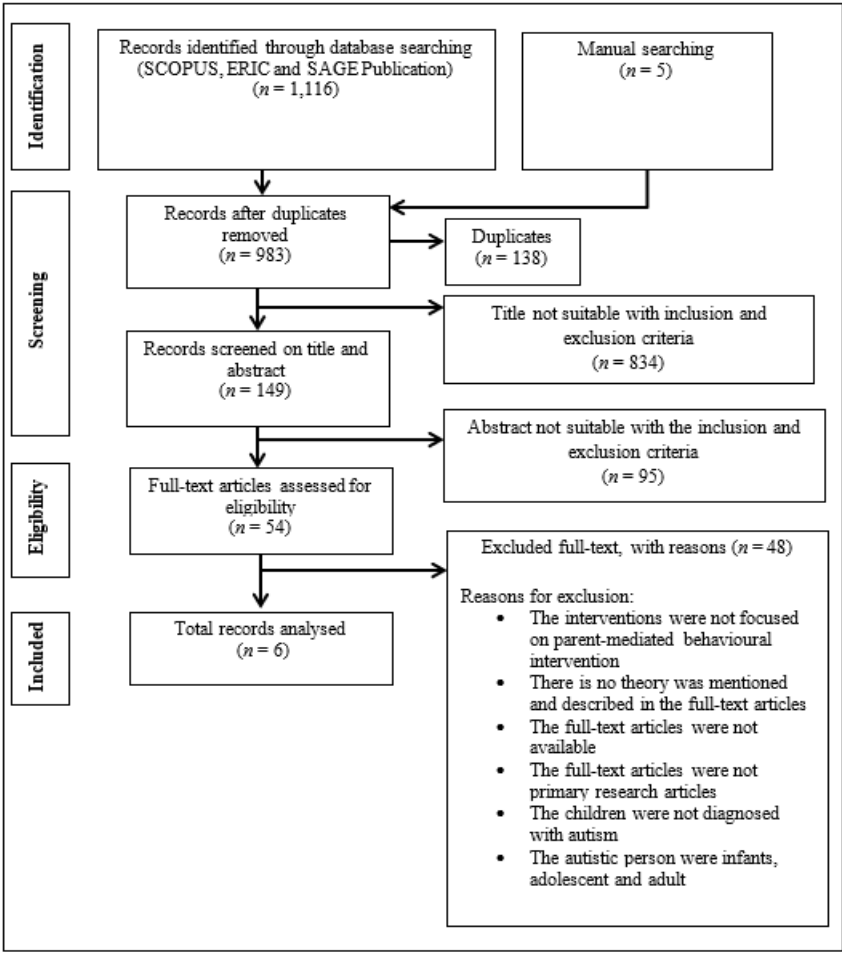

Figure 1. Flowchart of study selection process based on PRISMA flow diagram

Stage 4: Data Extraction

A matrix document was created to capture information relating to the authors' names, year of publication, study aims and purpose, types of theories adopted and roles of adopted theories in facilitating parent-mediated behavioural intervention across the different

studies in various settings of study methods, sample sizes and participants. The findings about the research questions are presented in Tables 1 and 2.

Table 1. Data extracted from the selected articles (Aims, purpose, methods, participants, sample size, parent-mediated behavioural intervention and adopted theories)

Author(s)/ Year	Study aims/ Purposes	Methods/ Participants/Sample size	Parent-mediated behavioural intervention	Adopted theories
Hwang et al. (2015)	To train mothers and teachers of children with ASD in mindfulness to the degree it could help them in their own lives and allow them to become mindfulness mediators for children with ASD and problem behaviour.	**Methods:** A pre/ post-test design was used (Quantitative). **Participants:** Children with ASD and their mothers. **Sample size:** 6 mother-child dyads. Children with ASD between the ages of 3 and 15 years old.	Parent Mindfulness Program with two-staged intervention. Stage 1: Mindfulness training for mothers of children with ASD and problem behaviours. Stage 2: Parent-educated children with mindfulness training for the children themselves.	Garland's The Mindfulness to Meaning Theory (MMT)
Baker et al. (2018)	To examine electrodermal activity (EDA) under-arousal, in the form of lower non-specific skin conductance responses (NSCRs), as a predictor of a parent-reported externalising problems in children with ASD between the ages of 4 and 11 years old, and to consider parent co-regulatory scaffolding as a potential buffer of the risk.	**Methods:** Clinical experimental (Quantitative) **Participants:** Children with ASD and their primary caregiver **Sample size:** 40 children with ASD between 4 to 11 years old, and their primary caregivers.	Three conceptual categories: parents-child complicence tasks, goal-oriented problem-solving tasks, and parent-child free play. 1. Prohibition Task (complience task) 2. Free Play 3. Clean-Up Task (complience task) 4. Dyadic Problem-solving Task (problem-solving task) 5. Frustation Task (problem-solving task) Parental support with parent co-regulatory scaffolding in terms of motivational, emotional and technical support to children with ASD during challenging activities.	Vygotsky's Sociocultural Theory of Scaffolding

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Author(s)/ Year	Study aims/ Purposes	Methods/ Participants/Sample size	Parent-mediated behavioural intervention	Adopted theories
Rad et al. (2020)	To analysed the progress of children diagnosed with ASD who are enrolled in a behavioural therapy programme in relation to the systemising level of their parents.	**Method:** A pre-post-test evaluation (Quantitative) **Participants:** Children with ASD and both of their parents. **Sample size:** 52 participants (aged 2 to 5 years old) and their parents.	An applied behavioural therapy programme for one year that was coordinated by a psychotherapist.	Baron-Cohen's Theory of Hyper-Systemising
Callanan et al. (2020)	To investigate PCRI-EI within an ealy childhood developmental service by presenting a pilot evaluation via four single case studies.	**Method:** A pre-post-test evaluation case studies (Quantitative) **Participants:** Family of autistic children aged 5 years old. **Sample size:** 4 case studies.	Parent-child Relationally Informed Early Intervention (PCRI-EI) includes construct such as maternal insightfulness, reflective functioning, parent embodied mentalising, active imitation, functional contextualism and intensive interaction. Phase 1: Following the child's ideas. Phase 2: Reflective capacity, cue reading and active imitation. Phase 3: Affect regulation of parent and child. Phase 4: Reframing behaviour and appreciating contextual issues. Phase 5: Integration, relapse prevention and generalising to settings outside the therapy.	Bowlby's Attachment Theory

Author(s)/ Year	Study aims/ Purposes	Methods/ Participants/Sample size	Parent-mediated behavioural intervention	Adopted theories
Tekola et al. (2020)	To explore the perspective and experiences of Ethiopian caregivers, professionals and other stakeholders on the WHO CST programme based on applied behaviour analusis and positive parenting principles to inform its adaptation and implementation in the Ethiopian culture and context.	**Method:** Pre-pilot study (Quantitative and Qualitative) **Participants:** Families of autistic and other developmental disorder children aged 2 to 9 years old. **Sample size:** 10 caregivers participated in the quantitative data procedures and in-depth interviews.	WHO's Caregivers Skills Training (CST) programme teach caregivers strategies to engage their child in communication and play and promote adaptive behaviours and learning as well as reduce challenging behaviour. 1. Introduction and psychoeducation. 2. Engaging with the child. 3. Helping children share engagement. 4. Understanding communication. 5. Promoting communication. 6. Preventing challenging behaviour. 7. Responding to challenging behaviour. 8. Learning new skills. 9. Problem solving and self-care.	• Bandura's Social Learning Theory • Developmental theories such as Vygotsky's Sciocultural Theory and B. F. Skinner Behavioural Theory

Author(s)/ Year	Study aims/ Purposes	Methods/ Participants/Sample size	Parent-mediated behavioural intervention	Adopted theories
Fang et al. (2022)	To provide insights into intensive parent training programme (SREIA) acceptability, reasons for participant involvement and factorsrelated to programme implementation.	**Method:** Quasi-experimental evaluations (Qualitative) **Participants:** Families of autistic children aged 3 to 6 years old. **Sample size:** 14 caregivers participated in the in-depth interviews.	The Stars and Rain Education Institute for Autism (SREIA) parent training programme-based applied behaviour analysis, aimed at reducing child challenges and promoting child development by increasing parental knowledge, improving parenting skills, changing parental attitudes, promoting parental mental health and creating social support.	• Albert Bandura's Social Learning Theory • B. F. Skinner's Operant Conditioning Theory • Developmental and Cognitive Behaviour Theory

Table 2. Data extracted from the selected articles (Roles/functions of theories and findings from the article)

Authors/Year	Roles/Functions of theories	Findings from the article
Hwang et al. (2015)	• The Mindfulness to Meaning Theory (MMT) illuminates the process through which mindfulness enhances eudaimonic well-being; it is indirectly promoted through mediating processes including decentering, positive reappraisal, positive affect and savoring. • Eudaimonic well-being (EWB) refers to quality of life derived from the development of a person's best potentials and their application in the fulfilment of personally expressive, self-concordant goals. • Mindfulness is the awareness that emerges through paying attention on purpose, in the present moment, and non-judgementally to the unfolding of experience moment by moment.	• Overall showed improvements in the targeted areas of the level of mindfulness, parenting stress and family quality of life for mothers, and problem behaviours for children. • A reduction in problem behaviours such as aggressive behaviours, attention problems, thought problems, rule breaking behaviours of children with ASD.

Authors/Year	Roles/Functions of theories	Findings from the article
Baker et al. (2018)	• Vygotsky's zone of proximal development (ZPD) and scaffolding theory emphasise learning is a social interaction process that requires interaction with more knowledgeable, more skills and competence individual such as parents. • The ZPD refers to skills are too difficult for a child to master or complete on his/her own, however, the child can achieve with guidance and encouragement from a knowledgable and skilled person such as parents. • Scaffolding is a teaching method or tool that helps and guides a child to learn more (gain new skills and knowledge) by working with more knowledgeable and skilled person to achieve the learning goals or complete the challenging tasks.	• Low EDA during the compliance-oriented tasks directly predicted higher child externalising problems. • Parental scaffolding moderated the link between under-arousal during the problem-solving regulatory tasks and externalising problems such that the relation was observed in the context of low, but not high support.
Rad et al. (2020)	A hyper-systemising parent will apply the rules of behavioural therapy in a very rigorious manner, extremely precise and will follow the programme and instructions provided by the therapist, thus offering the consistency of the therapeutic programme.	• The Autism Diagnostic Observation Schedule-Generic (ADOS-G) scores showed a significant improvement after one year of therapy in both communication and social interaction domains. • Only the fathers' systemising level - Systemising Quotient (SQF) had a significant effect on the ADOS-G scores after one year of therapy, with greater improvements reported for autistic children having fathers with higher SQF scores.

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Authors/Year	Roles/Functions of theories	Findings from the article
Callanan et al. (2020)	• Infants come into the world biologically pre-programmed to form attachment (primary attachment, monotropy) with others to help them to survive. A mother provides safety and security for the infant in the form of adaptive attachment. • Attachment behaviours such as proximity seeking whereby children produce innate behaviours call social releaser such as smiling or crying that stimulate caregiving from adults. This attachment behavioural system guides in patterns and habits of forming and maintaining relationships. • The importance of child's relationship with their mother result in their social, emotional and cognitive development. The form of attaachment is like cognitive framework that provide child's mental understanding about the world, self and other based on the relationship with their mother.	• Parental stress, parent-child relational stress and difficult child rating decreased. Parental sense of competence increased; there were slight gains in well-being measures. Results suggest PCRI-EI is a promising intervention for engaging parents in therapy and achieving positive outcomes. • A reduction in the difficult child ratings may be reflective of an increase development of insightfulness in parents in this study about their child communication and behaviour.
Tekola et al. (2020)	• Social learning theory indicates that observation and modelling play a significant role in how and why a child learns. Child learn in social environments by observing and then imitating the behaviours of people surrounding them. • Sociocultural theory views human development as a socially mediated process whereby children acquire cultural values, beliefs and problem-solving strategies via colaborative dialogues with more knowledgeable and skilled person such as parents through scaffolding teaching method. • Behavioural Theory states that a person is exposed to a stimulus that evokes a response and the response is reinforced. The learning and behaviour change are the result of reinforcement and punishment.	• The adapted Caregiver Skills Training was pre-piloted with excellent participation (100%) and retention (90%) rates. • The consultation participants indicated that the Caregiver Skills Training addresses an urgent need and is relevant to the Ethiopian context. • The World Health Organization's Caregiver Skills Training addresses a local need and, with careful adaptations, is feasible and acceptable to be implemented in Ethiopia.

Authors/Year		Roles/Functions of theories	Findings from the article
Fang et al. (2022)	•	-Social learning theory combined the concept of behaviourist and cognitive learning approaches that individuals learn through observation, imitation and modelling of others' behaviours and attitudes. Whereas social cognitive theory emphasises the learning occurs within a social context that people are active agents who can both influence and are influenced by their environment.	Findings point to the needs in low autism resource settings for substantial practice and feedback; group support; individualised coaching; more autism-related knowledge, resources and activities for children and extended family members; and organisational support to practitioners.
	•	Operant conditioning is a learning theory that describes how behaviours can be shaped and modified by specific consequences called reinforcers and punishers. It is a stimulus (antecedent) leads to a behaviour and then leads to a consequence. The behaviours are encouraged or discouraged through reinforcement (will be strengthened) and/or punishment (will be weakened).	
	•	Cognitive behavioural theory focuses on how certain thoughts lead to certain feelings that also in turn lead to certain behavioural responses (cognitive triangle).	

Stage 5: Collating, Summarising and Reporting Results

An inductive thematic analysis process was carried out using the six-step process outlined by Braun and Clarke (2006), which involves the researchers (a) becoming familiar with the data by reading the extracted data; (b) generating initial codes from all potential items; (c) searching for themes by analysing coded items, investigating relationships between the various codes, organising identified coded items and sorting them into the preliminary themes and sub-themes; (d) reviewing and refining themes; (e) defining and naming themes; and (f) organising the findings via a tabulated chart with finalised themes and indicating the narrative descriptions based on the themes.

RESULTS

The initial search through the databases of Scopus, ERIC and SAGE Publication yielded 1,116 articles and 138 duplicate articles were removed. Next, the titles and abstracts of the articles were read through and screened. According to the inclusion

and exclusion criteria, 929 articles were further excluded due to the unsuitability of the titles and abstracts. The full texts of the remaining 54 articles were then retrieved and assessed for further evaluation and eligibility. This resulted in the exclusion of another 48 articles due to the following reasons - they did not focus on parent-mediated behavioural intervention; no theory was mentioned and described; the full-text articles were not primary research articles, and also not available to access; the autistic person were infants, adolescent or adults; and the children were not diagnosed with autism. Only six articles were therefore included for analysis in the review. The summary of the article selection process is shown in Figure 1.

A summary of the six articles with information about the types of theories adopted and the roles of theories in facilitating parent-mediated behavioural intervention among autistic children is provided in Table 1. Theories that are adopted and employed in parent-mediated behavioural intervention among autistic children include Garland's The Mindfulness to Meaning Theory (Hwang et al., 2015); Vygotsky's Sociocultural Theory of Scaffolding (Baker et al., 2018; Tekola et al., 2020); Baron-Cohen's Theory of Hyper-Systemising (Rad et al., 2020); Bowlby's Attachment Theory (Callanan et al., 2020); Albert Bandura's Social Learning Theory (Fang et al., 2022; Tekola et al., 2020); B. F. Skinner's Operant Conditioning Theory and Behavioural Theory (Fang et al., 2022; Tekola et al., 2020); and the Developmental and Cognitive Behaviour Theory (Fang et al., 2022).

Five themes emerged to explain the roles of theories in facilitating parent-mediated behavioural intervention for autistic children who exhibit challenging behaviours:

1. Parents' characteristics, mindset and mental health.

2. Parents' practice of the scaffolding teaching method.

3. Parents' practice of the behavioural modification techniques.

4. Parent-child secure attachment relationship.

5. Parents acting as behaviour change agents.

Theme 1: Theories Explaining Parents' Characteristics, Mindset and Mental Health

Three articles highlighted the characteristics, mindset and mental health of parents that potentially influence the implementation fidelity of parent-mediated behavioural intervention (Fang et al., 2022; Hwang et al., 2015; Rad et al., 2020). These articles framed these issues through the theoretical frameworks of Baron-Cohen's Theory of Hyper-Systemising (Rad et al., 2020), Garland's Mindfulness to Meaning Theory (Hwang et al., 2015) and the Developmental and Cognitive Behaviour Theory (Fang et al., 2022). Baron-Cohen's Theory of Hyper-Systemising postulates that hyper-systemising parents or parents with a high systemising mechanism (SM) would apply the rules of behavioural intervention towards their autistic children in the home setting (Rad

et al., 2020). These parents pay close attention to detail and exercise extreme precision in following the programme and instructions provided by trainers or therapists, which leads to a consistency in the degree of compliance in ensuring the behavioural intervention practices are delivered as intended. Garland's Mindfulness to Meaning Theory described mindfulness as a cognitive-emotional process model and as an intentional, non-judgemental awareness of experience in the present moment to cultivate a healthy mind to enhance eudaimonic well-being in the quality of life (Garland et al., 2015). Additionally, the Developmental and Cognitive Behaviour Theory describes a cognitive triangle that focuses on how thoughts or cognition leads to certain feelings or emotions that also result in behavioural responses (Early & Grady, 2017). Therefore, parents' positive mindset, healthy mental health and superb attitudes not only influence the implementation fidelity of parent-mediated behavioural intervention but also affect their child's cognitive and emotional development, along with their behavioural responses which indirectly influence the family quality of life (Fang et al., 2022; Hwang et al., 2015; Rad et al., 2020).

Theme 2: Theories Explaining Parents' Practice of The Scaffolding Teaching Method

Two articles explained a social interaction learning process via the scaffolding teaching method (Baker et al., 2018; Tekola et al., 2020) in parent-mediated behavioural intervention among autistic children. Vygotsky's Sociocultural Theory views human cognitive development as a socially mediated process whereby children acquire new skills and knowledge that requires collaborative dialogues with a more knowledgeable and skilled person (Moore, 2011). The WHO's Caregiver Skills Training (CST) programme adopted one of the theories under Vygotsky's Sociocultural Theory to teach caregivers strategies to scaffold the learning of their autistic child to acquire new technical and problem-solving skills with motivational, emotional, and technical support (Baker et al., 2018) and encouragement for their autistic child to achieve their Zone of Proximal Development (ZPD) (Tekola et al., 2020). Understanding the central role of parental scaffolding within parent-mediated behavioural intervention may serve to reduce the emotional distress of both parent and autistic child and increase motivation in the learning process.

Theme 3: Theories Explaining Parents Practice of Behavioural Modification Techniques

Two articles discussed the increasing parental knowledge in parent education training revolving around strategies of preventing and responding to challenging behaviours of autistic children by practising behavioural modification techniques (Fang et al., 2022; Tekola et al., 2020). B. F. Skinner's Behavioural Theory and Operant Conditioning Theory state that a stimulus (antecedent) leads to behaviours and then results in a

consequence whereby the learning and behaviour could be changed, shaped, and modified by reinforcers and punishers (Schlinger, 2022). The WHO's Caregiver Skills Training (CST) programme and The Stars and Rain Education Institute for Autism (SREIA) parent training programme adopted the behavioural theory and operant conditioning theory based on the principles of Applied Behaviour Analysis (ABA) to address changes in the antecedents and consequences of challenging behaviours to reduce the challenging behaviours of autistic children (Tekola et al., 2020; Fang et al., 2022). Increasing parental knowledge of behaviour management principles and strategies may serve as a means to enhance parental self-efficacy and confidence to facilitate parent-mediated behavioural intervention.

Theme 4: Theories Explaining Parent-Child Secure Attachment Relationship

One article emphasised that parent-child intensive interaction involving relationship enhancement is to be performed by considering or following the child's ideas and active imitation (Callanan et al., 2020). Bowlby's Attachment Theory posits an attachment behavioural system that guides the patterns and habits of forming and maintaining relationships by producing innate behaviours to stimulate attention from caregivers (Fletcher & Gallichan, 2016). The formation of a secure attachment between the child and mother results in the child's social, emotional, and cognitive development, which shapes the child's mental understanding of the world, self, and others (Fletcher & Gallichan, 2016). Meanwhile, the Parent-Child Relationally Informed Early Intervention (PCRI-EI) involves the child initiating and directing instructional interaction and explains shared control, affects regulation of parent and child, reframing behaviours, relapse prevention and generalisation skills in settings that show reduction in parent-child relational stress and decrease in difficult child ratings and problematic behaviours (Callanan et al., 2020). Within parent-mediated behavioural intervention, theories of attachment and emotional regulation align with the distinctive relationship between parent and autistic child and its impact as a critical feature of parent-mediated behavioural intervention.

Theme 5: Theories Explaining Parents' Acting as Behaviour Change Agents

Two articles highlighted the role of parents as behaviour-change agents since children learn by observing, imitating, and modelling the behaviours and attitudes of people surrounding them in a social environment (Fang et al., 2022; Tekola et al., 2020). Albert Bandura's Social Learning Theory combined the behaviourist and cognitive learning approaches that posit human behaviours are learned through observation, imitation and modelling the behaviours, attitudes and emotional responses of others (Hammer, 2011). The WHO's Caregiver Skills Training (CST) programme and the Stars and Rain Education Institute for Autism (SREIA) parent training programme adopted this social learning theory to reduce challenging behaviours of autistic children by improving parental skills and changing parental attitudes (Fang et al., 2022; Tekola et al., 2020). Increasing

parental knowledge of how the learning process occurs within the social context of the home through observation and modelling of behaviours results in enhancing parent alertness about their positive behaviour and emotional response to their autistic child.

DISCUSSION

This literature review underscores the pivotal role of theories in guiding parent-mediated behavioural interventions (PMBI) aimed at managing and reducing challenging behaviours in autistic children. Across six empirical studies, the integration of theoretical perspectives provides essential insights into how parents' roles, attitudes and practices shape the success of such interventions. Central to PMBI is the intimate and influential parent-child relationship, where parents serve not only as caregivers but also as primary agents of behavioural change and learning support. Four major theoretical themes emerge, offering a comprehensive understanding of how parents' beliefs, behaviours and interactions influence intervention outcomes.

First, theories related to parental characteristics, mindset, and mental health emphasise the psychological underpinnings of effective intervention implementation. The Theory of Planned Behaviour (TPB) serves as a foundational lens, positing that a parent's intention to engage in behavioural intervention is driven by their attitudes, perceived norms and self-efficacy. Empirical evidence shows that high levels of parental stress may act as barriers, moderating the relationship between intention and actual behaviour (Ismail et al., 2025; Oono et al., 2013; Shalev et al., 2020), whereas positive cognitive orientations and systemising tendencies (Rad et al., 2020) enhance behavioural consistency. This theme suggests that intervention fidelity depends not only on skills but also on internal psychological resources (Tan et al., 2024), highlighting the importance of supporting parents' mental well-being as part of PMBI efforts.

Second, sociocultural and developmental learning theories—particularly Vygotsky's concept of the Zone of Proximal Development (ZPD)—provide a scaffold for understanding parents' instructional roles in teaching adaptive behaviours. PMBI positions parents as active facilitators who, through scaffolding techniques, support children's gradual mastery of skills such as ADLs, emotional regulation and social communication. Theoretical emphasis is placed on mediated learning, where structured guidance helps children transition from dependency to autonomy (Baker et al., 2018; Tekola et al., 2020). This theoretical lens frames parental practice as dynamic and responsive, shaped by the child's readiness and the parent's instructional acumen, thus linking learning theory with behavioural development in naturalistic contexts.

Third, behavioural theories—especially those rooted in Applied Behaviour Analysis (ABA) and Naturalistic Developmental Behavioural Interventions (NDBI)—theorise

behaviour as a function of environmental contingencies, which parents can manipulate to shape desired outcomes (Tan et al., 2024). These approaches are grounded in operant conditioning principles, where parents are taught to conduct functional behaviour assessments and implement interventions through antecedent manipulation and consequence-based strategies (Schreibman et al., 2015; Fang et al., 2020). The fusion of behavioural theory with developmental approaches in NDBI further expands the framework, supporting the use of interventions that are both structured and contextually embedded. These theories empower parents with practical tools to promote adaptive behaviours while reducing maladaptive ones through consistent, evidence-based strategies.

Fourth, attachment theory and relational models explain how emotional security and responsive parenting contribute to a supportive environment for behavioural and developmental growth. A secure parent-child attachment, as theorised by Bowlby and expanded by contemporary researchers, is foundational to a child's willingness to engage, explore, and regulate emotions (Callanan et al., 2020; Esmaeili & Tafti, 2016). Interventions grounded in these theories promote shared control and child-led interactions, which reinforce trust and mutual understanding. This relational dynamic enhances not only behavioural outcomes but also children's self-esteem, emotional resilience and overall mental health, affirming the importance of warm, responsive relationships in developmental intervention contexts.

In conclusion, the success of parent-mediated behavioural interventions is contingent on an integrated application of theoretical perspectives that encompass psychological readiness (TPB), instructional scaffolding (ZPD), behavioural modification (ABA/NDBI) and emotional security (attachment theory). These frameworks collectively underscore the complexity of parental roles in supporting autistic children and reinforce the need for holistic, theory-driven intervention models. Future research and practice should therefore prioritise comprehensive support systems that recognise the interplay between cognitive, emotional, instructional and behavioural dimensions in empowering parents as effective change agents in their children's lives.

IMPLICATION

This article has provided an important overview of the types of theories adopted and the roles of theories in facilitating parent-mediated behavioural intervention for autistic children. It further highlights the importance of parental roles and parental involvement in implementing parent-mediated behavioural intervention in the home environment. The parent acts as primary intervention agents, role models, as well as behaviour change agents to shape and foster positive behaviours among autistic children in a natural home environment to build generalisable skills across various settings. The parent-mediated behavioural intervention trainings equip parents with the necessary skills, strategies, knowledge and techniques to manage the challenging behaviours of autistic children in

the home environment. Therefore, parent-mediated behavioural intervention training not only provides benefits to autistic children leading towards positive child outcomes, but also provides advantages to their parents towards positive parent outcomes that contribute to the well-being of parent and child alike.

RECOMMENDATION

This review focused on the types of theories and their central roles in supporting parent-mediated behavioural intervention among autistic children. However, future studies should explore peer-mediated or sibling-mediated behavioural intervention because, besides their parents, autistic children also spend significant time with their peers at school and siblings at home. Additionally, since the availability and accessibility towards parent-mediated behavioural intervention services or training are limited for parents of autistic children in rural areas compared with parents in urban areas, future studies should thus evaluate the types of delivery medium of parent-mediated behavioural intervention among autistic children in rural areas. Exploring a range of modalities, such as in-person versus online synchronous or asynchronous learning to provide parents with training in parent-mediated behavioural intervention could increase access for parents in rural or remote areas to be able to deliver parent-mediated behavioural intervention for their autistic children. Moreover, investigating the duration and frequency of the parent-mediated behavioural intervention training is beneficial to discover the optimal duration of the parent education training to ensure that the parents of autistic children remain motivated and committed to attending parent-mediated behavioural intervention training.

CONCLUSION

This review highlighted the types of theories adopted and the roles of theories in parent-mediated behavioural intervention on parental characteristics that influence the fidelity implementation of parent-mediated behavioural intervention which affects the learning and development of autistic children. This review also discussed the children's learning and development process. A reduction of parental stress may lead to a reduction of behavioural and emotional problems in autistic children. Parent-mediated intervention is a time and cost-effective approach that offers the opportunity for intensive active engagement in intervention activities in a home environment. Therefore, parent-mediated intervention is considered an evidence-based practice to promote learning and development among autistic children in the most natural place, in the home. Parent-mediated behavioural intervention could teach parents to identify functions of behaviour, to prevent, teach and respond to challenging behaviours and to facilitate positive behaviours in their autistic children. Parental mental health would be improved; hence, the family's quality of life would indirectly experience enrichment. Thus, parent-mediated behavioural intervention

training should consider supporting the mindfulness of parents, in addition to targeting intervention for autistic children.

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The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

DATA AVAILABILITY STATEMENT

Data availability is not applicable to this review article as no new empirical data were created or analysed in this review study.

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