

Challenging Behaviour in Children with Autism Spectrum Disorder: A Conceptual Review of Parental Management Strategies

Hamsni Perumal¹, Sarfraz Aslam^{1*}

¹ Faculty of Education and Humanities, UNITAR International University, Tierra Crest, Jalan SS 6/3, Ss 6, 47301 Petaling Jaya, Selangor, Malaysia

*Corresponding Author: Sarfraz.aslam@unitar.my

Received: 2 March 2026 | Accepted: 15 April 2026 | Published: 20 May 2026

DOI: <https://doi.org/10.55057/ajress.2026.8.4.1>

Abstract: *Challenging behaviours in children with autism spectrum disorder (ASD) have long been a major concern. They affect parental stress, family life, and children's participation in school and community activities. These behaviours, which include aggression, self-injury, severe tantrums, non-compliance, and emotional dysregulation, are increasingly seen as responses to environmental, sensory, or communication challenges. This highlights how important parents are in managing these behaviours. This paper brings together recent peer-reviewed research on challenging behaviours in children with ASD. It especially looks at the issues parents face and strategies for managing these behaviours. It draws on established theories and frameworks, like Applied Behaviour Analysis (ABA), Positive Behavioural Support (PBS), and the Prevent-Teach-Reinforce (PTR) model. The review summarizes evidence about behaviour function, parenting stress, and parent-led interventions. The findings show that challenging behaviours in ASD are closely linked to communication issues, unusual sensory processing, challenges with emotional regulation, and environmental factors. Evidence-based, function-focused, and parent-led interventions grounded in ABA, PBS, and PTR consistently lead to positive results. These include reduced challenging behaviours, greater parental confidence, and better family functioning. However, caregivers, especially in Malaysia and similar cultures, face significant obstacles. They often deal with high stress levels, limited access to training, social stigma, unequal access to services, and a lack of standardized guidance for parents. In response, this paper suggests a framework that views parents as essential change agents in a dynamic system influenced by the child's characteristics, behaviour function, parental mental health, and cultural factors. The findings stress the need for parenting programs that are sensitive to cultural contexts, the integration of mental health support for parents into behaviour interventions, and better access through technology-based delivery methods.*

Keywords: Challenging behaviour, Behaviour-management, autism spectrum disorder (ASD), Parental strategies, Parental guidance.

1. Introduction

Autism Spectrum Disorder (ASD) is a condition that lasts throughout life marked by ongoing challenges, in social communication and interaction as well as limited and repetitive behavioural patterns according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013.) Worldwide the occurrence of ASD has

risen in the ten years with present estimates showing that about 1 in 100 children globally are diagnosed with ASD though the figures differ by region because of variations in diagnostic methods, awareness and access, to services (World Health Organization, 2023).

In Malaysia, while a precise national prevalence rate has yet to be established, reports from the Ministry of Health and national registries indicate a steady increase in ASD identification and service utilisation, particularly among children in urban areas, reflecting growing awareness and demand for support services (Zeidan et al. 2022). The increasing prevalence of ASD has led to the condition being seen as one of the biggest public health, educational and social challenges.

In addition to the diagnostic characteristics, there is a high rate of challenging behaviours among children with ASD, which also tends to be similar in their parents and service-providers (Kanne & Mazurek 2021). Behaviours such as aggression, self-injury, severe tantrums, non-compliance and emotional dysregulation are more directly associated with parental stress, lower family quality of life and higher service use than level of ASD symptom severity (Kanne & Mazurek 2021; Neece et al., 2022). Furthermore, these behaviours are associated with significant short- and long-term negative outcomes, including child risks to safety and learning, compromised educational access, caregiver burnout and enhanced propensity for restrictive placements (McTiernan et al., 2023).

Current research on ASD views challenging behaviours associated with ASD not as wilful misbehaviour but as complex responses to unmet needs due to communication deficits, sensory processing deficits, difficulties with regulating emotions, and environmental demands (Leung et al., 2022; Brookman-Fraze et al., 2021). At a global level, current literature consistently identifies challenging behaviour as a primary reason parents seek intervention and ongoing professional support (Brookman-Fraze et al., 2021).

Parents frequently report disruptions to daily routines, social isolation, financial strain, and elevated levels of anxiety and depression (Hsiao et al., 2021; Yorke et al., 2023). Importantly, parental capacity to manage challenging behaviour has been recognised as a key mediator of child outcomes, underscoring the importance of parent-focused intervention approaches. In Malaysia, awareness and identification of ASD have increased in recent years, accompanied by growing demand for early intervention and special education services (Ministry of Health Malaysia, 2022). Although comprehensive national prevalence data remain limited, available studies and governmental reports indicate a steady rise in ASD identification, particularly in urban regions (Rahman et al., 2021; Ministry of Health Malaysia, 2022).

Malaysian parents commonly assume the role of primary caregivers and behaviour managers, often navigating challenging behaviour with limited access to structured, evidence-based parental guidance (Ooi et al., 2021). Cultural expectations, stigma related to developmental disabilities, financial burden, and uneven distribution of services further intensify parental stress and influence behaviour-management practices (Ooi et al., 2021; Neik et al., 2023). Globally, intervention efforts have increasingly shifted towards parent-mediated and family-centred approaches (Bearss et al., 2020).

Evidence-based frameworks such as Applied Behaviour Analysis (ABA), Positive Behaviour Support (PBS), and structured parent-training programmes emphasise empowering parents to manage challenging behaviour within naturalistic home environments (Bearss et al., 2020; Cridland et al., 2022). These approaches focus on understanding behavioural function,

modifying antecedents, teaching alternative skills, and reinforcing adaptive behaviour. However, access to such interventions remains uneven, particularly in low- and middle-income countries, where parents often rely on informal strategies or fragmented services (Divan et al., 2021).

Within the Malaysian context, existing interventions are largely delivered through private therapy centres, early intervention programmes, and non-governmental organisations, with limited standardisation and inconsistent parental training components (Zeidan et al. 2022). While parents frequently employ self-directed learning, peer support, and culturally informed coping strategies, the absence of a comprehensive, culturally adapted framework for parental management of challenging behaviour remains a significant gap (Neik et al., 2023).

The aim of this conceptual paper is to critically examine challenging behaviour in children with ASD and the strategies employed by parents to manage such behaviours. Specifically, the paper synthesises theoretical models and empirical findings published to conceptualise the seriousness of challenging behaviour, examine explanatory frameworks, analyse parental challenges and strategies, and compare evidence from Malaysia with international research. By integrating global and local perspectives, this paper seeks to inform future research, policy, and the development of culturally responsive, parent-focused approaches to managing challenging behaviour in children with ASD.

2. Conceptualisation of Challenging Behaviour in ASD

Behavioural characteristics in children with ASD need to be considered within the context and neurodevelopmental model and cannot merely be considered core symptoms of ASD (Tseng et al., 2022). Aggression, self-injury, and non-compliance with instruction can very directly be attributed to the sensory processing problem and the emotion regulation problem that follows, in which the intervening variable or the mediator is the emotion dysregulation (Tseng et al., 2022; Mazefsky et al., 2021; Mazefsky & White, 2023).

2.1 Types of Challenging Behaviour

Children with ASD can show challenging behaviours that vary from one individual to another (Dellapiazza et al., 2022). Some of these behaviours include aggression, self-harm, extreme meltdowns, not listening, and engaging in repetitive actions that make daily activities hard. These behaviours are usually specific to certain situations and relate directly to core characteristics of ASD, such as communication problems, hypersensitivity to visual, auditory, and tactile stimuli, and difficulty in managing emotions (Tseng et al., 2022).

Studies show that difficulties in understanding the world around them are closely linked to irritability, hyperactivity, and not following rules (Tseng et al., 2022; Dellapiazza et al., 2022; Zaidman-Zait et al., 2020; Neece et al., 2022). Challenging behaviour in children with ASD reflects their struggle to manage internal feelings and external pressures, rather than intentional misbehaviour (Tseng et al., 2022; Dellapiazza et al., 2022).

2.2 Function of Challenging Behaviour

The functional perspective explains that challenging behaviour in children with ASD serves specific purposes beyond just intentional wrongdoing (O'Nions et al., 2020). For example, it may be used to gain access to things and activities they want, escape from situations to avoid demands, gain attention, or manage sensory and emotional experiences. Recent studies provide

new insights about the role of avoiding demands and emotional responses in reducing anxiety or uncertainty after the behaviour escalates (Hanley et al., 2021; O’Nions et al., 2020).

Functional Behaviour Assessments (FBA) are still essential for understanding behaviour and its connection to the environment. They are crucial for modern parent-driven and family-oriented techniques like Positive Behaviour Support and Prevent-Teach-Reinforce (McKenney et al., 2022; Cridland et al., 2022).

3 Theoretical Foundation

In this conceptual paper the behavioural, family systems, and ecological models were selected because they are the most popular and well-supported frameworks for understanding and addressing challenging behaviour in children with ASD. Additionally, ABA, PBS, and the Prevent-Teach-Reinforce (PTR) model are examples of behavioural methods that remain effective, evidence-based interventions, particularly in home and parent-led settings (Hanley et al., 2021). Family systems and ecological models consider the back-and-forth effects of parental stress, family dynamics, and cultural factors (O’Nions et al., 2020). This helps in creating more thorough and culturally sensitive intervention designs.

3.1 Applied Behaviour Analysis (ABA)

When it comes to understanding and managing challenging behaviour in kids with ASD, behavioural theory remains essential. This framework, based on operant conditioning, sees behaviour as shaped by environmental triggers and results (Hanley et al., 2021). Applied Behaviour Analysis (ABA) uses this idea and applies proven techniques to systematically assess and change behaviour. A key part of ABA is Functional Behaviour Assessment (FBA) (Cridland et al., 2022). This process identifies the reasons behind challenging behaviour, like seeking escape, getting attention, or needing sensory input. It also helps select targeted interventions. Recent studies show that when parents take part in FBA informed interventions, the improvements in behaviour are more likely to carry over and last, especially at home (Hanley et al., 2021; Cridland et al., 2022).

3.2 Positive Behaviour Support (PBS)

Positive Behaviour Support (PBS) is an evidence-based approach developed from applied behaviour analysis, person-centred planning, and ecological systems theory, with its origins in the disability rights and deinstitutionalisation movements that emphasised quality of life and social inclusion rather than behaviour suppression (Carr et al., 2002; Gore et al., 2022). PBS supports individuals with behavioural challenges by teaching functional skills and modifying environmental factors to reduce triggers and promote positive engagement in daily activities (Gore et al., 2022).

The approach is proactive in nature, focusing on preventive strategies such as establishing predictable routines, adapting the physical and social environment, and teaching functional communication skills to replace challenging behaviour. Importantly, PBS aims not only to reduce challenging behaviour but also to enhance overall quality of life for the individual and their family, making it particularly effective and sustainable for home-based implementation. Its emphasis on family values, daily routines, and collaborative problem-solving makes PBS especially relevant for parents managing challenging behaviour in everyday contexts (McClean et al., 2021).

Recent research shows that PBS is a way to help people and it respects the culture of the family. PBS is successful because it combines behaviour goals with life and what parents value. PBS-informed parent education is especially appropriate for home-based interventions because research shows that it is linked to improvements in family functioning and decreases in challenging behaviour (Gore et al., 2022; McClean et al., 2021).

3.3 The Model of Prevent-Teach-Reinforce (PTR)

Based on Positive Behaviour Support (PBS) principles, the Prevent–Teach–Reinforce (PTR) model is a structured, manualised, and function-based intervention originally developed by Dunlap and colleagues to support children with challenging behaviour through collaborative problem-solving with families and educators (Dunlap et al., 2010; Dunlap et al., 2020). PTR was designed to translate functional behaviour assessment findings into practical, user-friendly intervention plans that can be implemented consistently across home and educational settings. The model focuses on preventing challenging behaviour through antecedent modification, teaching functionally equivalent alternative behaviours, and reinforcing adaptive responses to replace maladaptive patterns.

Recent empirical research demonstrates that parents can implement PTR strategies with high fidelity following coaching and ongoing support, resulting in significant reductions in challenging behaviour and improvements in adaptive functioning and parent–child interactions within the home environment (McKenney et al., 2022; Strain et al., 2021). The structured yet flexible nature of PTR makes it particularly well suited for parent-mediated interventions, as it accommodates individual family routines, cultural contexts, and real-life parenting demands.

3.4 Theory of Family Systems

According to family systems theory, originally developed by Bowen (1978), challenging behaviour is not viewed solely as an individual child characteristic but as embedded within reciprocal and dynamic family interactions. This theoretical perspective conceptualises the family as an interconnected system in which parental stress, parenting practices, sibling relationships, and overall family functioning both influence and are influenced by child behaviour. Contemporary research supports this bidirectional view, demonstrating that supportive, structured, and emotionally responsive family environments are associated with reduced severity of challenging behaviour, whereas elevated parental stress, family conflict, and inconsistent parenting responses are linked to more persistent and severe behavioural difficulties in children with ASD (Neece et al., 2022; Yorke et al., 2023). By emphasising reciprocal influence, family systems theory highlights the importance of addressing parental well-being and family dynamics alongside child-focused interventions to achieve sustainable behavioural outcomes.

3.5 Models of Ecology and Bioecology

Ecological and bioecological models, originally proposed by Bronfenbrenner in the year 1977), emphasise the dynamic interplay between a child’s individual characteristics and multiple nested environmental systems, including the family, school, community, and broader sociocultural and policy contexts. Within this framework, child behaviour is understood as the outcome of ongoing interactions between personal traits (e.g., communication abilities, sensory regulation) and contextual influences. Contemporary research applies these models to ASD to demonstrate how parental experiences and behaviour-management strategies are shaped by sociocultural norms, service accessibility, economic resources, and community support systems (Divan et al., 2021).

In collectivist, low- and middle-income contexts such as Malaysia, where caregiving responsibilities are often concentrated within families and access to specialised services remains uneven, ecological perspectives are particularly relevant for understanding parental burden and contextual barriers to effective behaviour management (Neik et al., 2023). Consequently, ecological and bioecological models provide a valuable theoretical lens for designing culturally responsive, parent-focused interventions that address both child behaviour and the environmental conditions that sustain it.

4. Parental Challenges in Managing Challenging Behaviour

The responsibility for raising children diagnosed with ASD can pose considerable psychological pressures, along with practical demands, on parents; this is especially true when children present with ongoing challenging behaviours (Taylor et al., 2021). The emotional dysregulation, non-compliance, and high levels of intensity associated with challenging behaviours contribute to greater levels of stress and psychological distress for parents, thereby adversely affecting their ability to apply consistent behaviour-management strategies (Taylor et al., 2021; Yorke et al., 2023).

Parental self-efficacy is an important influence on parental stress, whereby lower levels of confidence correspond to higher levels of stress, as well as higher levels of reported behavioural difficulties for their children; in turn, this emphasises the importance of developing interventions that enhance parents' capacities and confidence (Chen et al., 2021; Li et al., 2022). Behaviour management practices for parents are also affected by; family dynamics, cultural factors, stigma, and barriers to accessing, evidence-based interventions; resulting in delayed support and increased parental isolation from other parents who also have children diagnosed with ASD (Akdag et al., 2025; Ooi et al., 2021).

Due to limited access to coordinated and specialist services, many parents resort to using informal, trial and error methods to manage their child's challenging behaviour, which leads to inconsistent behaviour-management practices and relatively higher levels of emotional stress (Kay et al., 2025). Parental stress is moderated by perceived social support and the use of effective coping strategies; an increase in perceived social support is associated with improved adaptation and more effective behaviour-management practices (Hsiao et al., 2021; Park et al., 2023).

These interconnected challenges underscore the importance of supporting parental wellbeing, enhancing self-efficacy, and improving access to culturally appropriate resources (Neece et al., 2022; Yorke et al., 2023; Divan et al., 2021). Table 1 provides an overview of the major parental challenges associated with managing challenging behaviour in children with ASD.

Table 1: Parental Challenges in Managing Challenging Behaviour in Children with ASD

Subtopic	Parental Challenges	Recent Research
Parental Stress & Mental Health	Persistent challenging behaviours (e.g., aggression, tantrums, self-injury) increase parental psychological distress, which in turn reduces consistency and effectiveness in behaviour management. High stress often leads to reactive responses rather than proactive strategies.	Neece et al. (2022): Challenging behaviour severity predicts parental stress and depressive symptoms.
		Yorke et al. (2023): Parental mental health mediates the relationship between child behaviour and intervention outcomes.

Parenting Styles & Behaviour Management	Parenting style influences how parents respond to challenging behaviour. Elevated stress may shift parents from authoritative to authoritarian or permissive responses, unintentionally maintaining non-compliance and emotional dysregulation.	Ooi et al. (2021): Malaysian parents predominantly use authoritative styles but report inconsistency under stress.
		Kanne & Mazurek (2021): Inconsistent parenting responses are associated with increased externalising behaviours in children with ASD.
Parental Self-Efficacy	Low confidence in managing behaviour leads parents to avoid demands or over-accommodate, reinforcing escape-maintained behaviours. Higher self-efficacy supports consistent use of antecedent and reinforcement strategies.	Smith et al. (2022): Parental self-efficacy predicts fidelity of behaviour-management strategy use.
		Lee et al. (2023): Parent training improves self-efficacy and reduces child challenging behaviour.
Family Functioning & Quality of Life	Challenging behaviours disrupt family routines and social participation, leading families to restrict activities to prevent behavioural escalation. This limit learning opportunities and increases caregiver burden.	Taylor et al. (2021): Behavioural severity is negatively associated with family quality of life.
		Marcus et al. (2024): Family routine disruption mediates the relationship between child behaviour and parental burnout.
Access to Services & Financial Burden	Limited access to services reduces parents' exposure to evidence-based strategies, resulting in reliance on trial-and-error approaches. Financial strain exacerbates stress and reduces intervention engagement.	Divan et al. (2021): Families in low- and middle-income countries face major barriers to accessing parent training.
		Neik et al. (2023): Malaysian parents report cost and service availability as key barriers to managing challenging behaviour.
Stigma, Cultural Beliefs & Help-Seeking	Stigma and cultural beliefs may delay diagnosis and intervention, increasing the duration and severity of unmanaged challenging behaviour and parental stress.	Ooi et al. (2021): Cultural stigma influences help-seeking among Malaysian parents of children with ASD.
		Neik et al. (2023): Fear of judgement limits parental engagement with formal behaviour-support services.
Coping Strategies & Social Support	Effective coping and strong social support buffer parental stress, enabling sustained use of behaviour-management strategies. Limited support increases burnout and reduces intervention consistency.	Hsiao et al. (2021): Social support moderates the impact of child behaviour on parental stress.
		Park et al. (2023): Adaptive coping strategies are associated with better child behaviour outcomes.
Parental Physical Health & Well-Being	Sleep disruption and physical exhaustion reduce parents' emotional regulation and patience, increasing reactive responses to challenging behaviour.	Brown et al. (2023): Poor parental sleep quality predicts harsher parenting responses.

		Pardo-Salamanca et al. (2024): Parental fatigue is associated with increased child behaviour escalation.
Knowledge, Training Uptake & Digital/Telehealth Solutions	Limited understanding of behavioural function impairs strategy selection. Parent training, especially via telehealth, improves parents' knowledge, confidence, and fidelity in managing challenging behaviour at home.	Bearss et al. (2020): Parent training improves behaviour outcomes through increased parental competence.
		McKenney et al. (2022): Telehealth coaching is effective in reducing challenging behaviour and parental stress.

Table 1 indicate that the challenges in managing challenging behaviours of children with ASD can be difficult and have numerous psychological, behavioural and contextual influences (Neece et al 2022; Yorke et al 2023). The ability for parents to respond consistently and effectively to their child's challenging behaviour may be affected by the level of parent stress and parent mental health, whereby a high level of parent stress is associated with increased use of reactive and inconsistent parenting practices that are likely to lead to exacerbation of the challenging behaviours displayed by their child (Hsiao et al 2021; Kanne & Mazurek 2021).

Two of the major influences on effective behaviour management are parenting style, knowledge of behaviour management, and parent self-efficacy. Parents who lack training or confidence in behaviour management are more likely to use trial-and-error, avoidant or punitive behaviour management strategies and will, therefore, experience poorer behaviour management outcomes. In contrast, parents who use structured, function-based strategies for behaviour management are more likely to show parental consistency, increased self-efficacy and improved behaviour regulation for their child (Bearss et al 2020; Cridland et al 2022).

Access to effective behaviour management is further restricted through socio-cultural and structural barriers, including stigma, financial limitations, and lack of service availability, especially in low-income and middle-income countries such as Malaysia, where mothers often assume the role of primary caregiver, experience high levels of stress, and have inadequate formal training (Divan et al 2021; Neik et al 2023). Emerging solutions, such as parent training programs, digital health tools, and telehealth services, show promise in increasing access to evidence-based strategies, reducing child challenging behaviours, and improving parental wellbeing, underscoring the need for integrated, parent-centred service delivery models (Parsons et al., 2023; Yorke et al., 2023).

5. Parental Strategies for Managing Challenging Behaviour

In recent years, the understanding of challenging behaviours exhibited by children diagnosed with ASD has expanded. Researchers now suggest that these behaviours, such as aggression, tantrums and sensory-triggered meltdowns, are often communicative in nature, and can therefore be identified as having social functions (Hanley et al., 2021; O’Nions et al., 2020). To successfully manage these behaviours, it is important to implement interventions that reduce challenging behaviours by teaching new skills, changing environmental triggers, and promoting the child’s emotional and communication skills (Bearss et al., 2020).

Due to the high prevalence of parents or family members acting as the primary intervention providers (i.e., behaviour modification, skill-building and regulation-focused strategies) in

their child’s naturalistic routines at home (Bearss et al., 2020; Brookman-Frazee et al., 2021), parent-implemented interventions such as functional communication training, antecedent modifications, visual supports and differential reinforcement, result in significant decreases in challenging behaviours based on the parent’s ability to determine and respond to the function of the behaviour (Bearss et al., 2020; McKenney et al., 2022).

In addition to the benefits of using behaviour-based strategies, the influence of parental coping strategies and emotional regulation play a role in their ability to consistently implement interventions and the success of the child’s outcome; i.e., parents with higher levels of coping skills tend to have higher levels of success with their child’s outcomes (Hsiao et al., 2021; Park et al., 2023). Overall, the literature highlights the need for structured, culturally responsive parent training that builds functional understanding of behaviour and supports sustained strategy use. Table 2 summarises common challenging behaviours in children with ASD and evidence-based management approaches from a parental perspective.

Table 2: Common Forms of Challenging Behaviour Observed in Children with ASD

Challenging Behaviour	Parental Strategy	Description
Non-compliance	Antecedent modification (structure & predictability)	Parents modify the environment and expectations to reduce triggers, using structured routines, visual schedules, warnings before transitions, and clear expectations. Antecedent strategies help children anticipate activities and reduce uncertainty, which is linked to improved compliance (O’Nions et al., 2020; Park et al., 2023).
		Structured antecedent support also enhances engagement and reduces avoidance behaviour when compared to unstructured expectations (Leung et al., 2022).
Tantrums & Emotional outbursts	Functional Communication Training (FCT)	FCT teaches children communicative alternatives to express needs (e.g., “break,” “help,” cards, sign language) in place of emotional outbursts. Evidence shows that FCT reduces the frequency and intensity of tantrums by replacing challenging behaviour with functional communication (Bearss et al., 2020; Wacker et al., 2021).
		Parent-implemented FCT also improves regulation and reduces frustration by teaching children how to request support proactively (Schieltz et al., 2022).
Aggression & Self-Injury	Differential Reinforcement (DRA/DRI)	Parents systematically reinforce positive or incompatible behaviour (e.g., compliance, communication) while minimizing attention for aggression or self-injury. DRA demonstrates robust reductions in severe problem behaviours when consistently applied (Hanley et al., 2021; Greer et al., 2020).
		Training parents in differential reinforcement increases positive interactions and decreases coercive cycles that maintain aggression/self-injury (Fisher et al., 2020).
Sensory-Driven Behaviours	Sensory-Based Adaptations & Regulation Supports	Sensory supports (quiet areas, deep pressure tools, noise reduction) address sensory overload that often triggers challenging behaviour. Sensory strategies reduce dysregulation and promote self-soothing, particularly in children with sensory processing difficulties (Dellapiazza et al., 2022; Bagby et al., 2021).
		Parental use of individualized sensory supports is associated with decreases in behavioural escalation and improved participation (Lane et al., 2021).
Escape/Avoidance of Demands	Task modification & Pacing	Parents break tasks into manageable steps, use “first/then” boards, reduce demands, and allow breaks to prevent overwhelming the child. Task modification reduces demand

		avoidance behaviour and increases task engagement (McKenney et al., 2022; O’Nions et al., 2020).
		Strategic pacing of tasks has been linked to decreased escape-maintained problem behaviour and increased compliance (Schmidt & O’Connor, 2021).
Routine Transitions	Visual Schedules & Timers	Visual schedules and timers prepare children for changes, helping them anticipate transitions. Predictability supports regulation and reduces resistance and behavioural escalation (Park et al., 2023; Ray-Avni et al., 2021).
		Use of visual support systems has been shown to enhance emotional regulation during routine changes compared to verbal instructions alone (Wong et al., 2020).
Attention-Maintained Disruption	Planned Ignoring & Attention Shaping	Parents intentionally ignore minor disruptive behaviours while providing attention for appropriate alternatives, teaching children that positive behaviours receive attention while disruptive ones do not. This reduces attention-maintained disruption when applied consistently (Allen & Warzak, 2022; Paul et al., 2021).
		Research indicates that attention shaping fosters social engagement and reduces reliance on disruptive behaviour for caregiver attention (Koegel et al., 2020).
Anxiety-Linked Avoidance	Cognitive-Behavioural Strategies & Preparation	Supporting children to manage anxiety around unfamiliar or unwanted events through preparation, coping scripts, and rehearsal helps reduce avoidance and challenging behaviour. Research shows that cognitive-behavioural techniques adapted for ASD can reduce anxiety and related avoidance behaviour (Wood et al., 2020; White et al., 2021).
		Parent-assisted coping strategies improve toleration of demands over time (Reaven et al., 2021).

5.1 Behavioural and Skill-Based Strategies

The use of behaviourally and skill-based approaches that are based on the Functional Behavioural Approach (FBA) has been demonstrated to be an effective means of managing challenging behaviours displayed by children with ASD. The FBA process involves identifying both the antecedents and consequences of behaviour to determine the function of that behaviour and then teaching adaptive replacement behaviours (Hanley et al., 2021; Resnik, 2007). Modification of antecedent events, using visual schedules, structured routines, and advance notice of transitions, serves to reduce uncertainty in the child and increase their level of compliance (Leung et al., 2022; Park et al., 2023).

Parent-implemented Functional Communication Training (FCT) has been found to be associated with decreases in the number of times a child tantrum and has emotional outbursts (Bearss et al., 2020; Schieltz et al., 2022). Additionally, the use of differential reinforcement strategies provides additional support for changing behaviour by emphasising reinforcing appropriate behaviours while reducing the number of times a child receives reinforcement for exhibiting challenging behaviours. The findings from previous studies indicate that using these strategies when parents are aware of the function of the behaviour and consistently apply the strategies in their everyday routines can reduce aggressive behaviour and increase compliant behaviours (Fisher et al., 2020; Hanley et al., 2021; Brookman-Frazee et al., 2021).

5.2 Parent-Mediated Interventions

Parent-Mediated Intervention (PMI) empowers parents to implement evidence-based behavioural strategies in their natural environment at home through training. PMIs are increasingly accepted as the best practice movement within ASD intervention (Bearss et al., 2020). PMIs produce significant decreases in challenging behaviours and lead to higher

confidence, competence and consistency of behaviours managed by parents (Cridland et al., 2022).

Models built on "Coaching" that incorporate real-time feedback and goal setting provide parents with increased adherence and improvement in the child's outcomes relative to Parent Education Models (Brookman-Frazer et al., 2021; McKenney et al., 2022). Telehealth models have increased significantly in quantity since their emergence at the beginning of the COVID-19 pandemic, providing parents access to PMI resources where in-person services may have limited availability (McKenney et al., 2022; Parsons et al., 2023). In addition, PMI models that align with family goals and include routines and priorities promote increased Parent engagement and long-term sustainability of behaviour changes (Cridland et al., 2022).

5.3 Coping and Emotional Regulation Strategies

Parental emotional regulation and coping strategies are essential for effectively managing the behaviours of children diagnosed with ASD (Neece, 2022). Parents under excessive stress, anxiousness, or emotional exhaustion are likely to react with either inconsistent or reactive behaviours toward the challenging behaviours of their children. This type of parental reaction can lead to the perpetuation of challenging behaviour (Kanne, Mazurek, 2021) (Neece, 2022). Studies indicate that parents who use adaptive methods of coping (e.g., Problem-Focused Coping, Positive Reframing, Seeking Social Support) report lower levels of parental stress and more consistent management of their child's behaviour than parents who utilise maladaptive ways to cope with the challenges associated with parenting a child diagnosed with ASD (Park et al., 2023; Pardo-Salamanca et al., 2024).

Qualitative research conducted on self-care practices and peer support networks amongst caregivers of individuals on the autism spectrum has found that parents who practise such self-care and peer support exhibit greater resilience when faced with ongoing behavioural challenges (Hsiao et al., 2021; Yorke et al., 2023). Thus, a relevant and effective approach to managing behaviour in ASD must include sufficient support to address the emotional well-being of the parent or caregiver.

5.4 Aligning Strategies with Behavioural Function

Parents can create more effective strategies for handling the challenging behaviour of their children by considering the function of that behaviour (Hanley et al., 2021). For instance, behaviours maintained by escaping from a demand can be addressed through making modifications to tasks and using visual supports. Attention-maintained behaviours can be addressed using differential reinforcement and planned to ignore. Additionally, behaviours maintained by sensory stimulation can be addressed through environmental modifications and the use of regulation supports (O'Nions et al., 2020; Allen & Warzak, 2022; Dellapiazza et al., 2022).

Research indicates that function-based interventions when implemented by trained parents lead to reduced challenging behaviours that are consistent across multiple environments and can generalise well to other settings. This occurs because parents have a greater understanding of their child's behaviours (McTiernan et al., 2023; Schmidt & O'Connor, 2021). Because function-based, skill-orientated strategies are embedded into daily routines, they are more effective than reactive strategies (Bearss et al., 2020; Dunlap et al., 2021). Research shows that Parent-Mediated Interventions provide parents with the necessary supports to enhance their ability to respond consistently and confidently to their child's behaviour.

Therefore, when these interventions are provided through coaching or telehealth models, they enhance the ability of parents to implement the intervention in a sustainable way (Bearss et al., 2020; Ferguson et al., 2022). Additionally, a parent's stress level and their ability to regulate their emotions also impact the success of the intervention, as high levels of stress reduce the implementation fidelity and the amount of behavioural gain (Neece et al., 2022; Yorke et al., 2023). Overall, aligning interventions with the function of behaviour while supporting parental wellbeing leads to more durable and transferable behaviour change, especially in culturally diverse and resource-limited contexts where parents are the primary intervention providers (Hagopian et al., 2020; Divan et al., 2021; Neik et al., 2023).

6. A Cross-National Comparison of Behaviour-Management Strategies

Research from both Malaysian and international contexts highlights the central role of parent mediated strategies in managing challenging behaviours in children with ASD (Bearss et al., 2020; Cridland et al., 2022). Previous research conducted in many regions of the world has demonstrated that behavioural interventions developed and implemented by parents of children with ASD using functional assessments and behaviour analysis are feasible and effective (Cridland et al., 2022). Parent's use of behavioural strategies, including those such as applied behaviour analysis (ABA) and function-based interventions, has been associated with the reduction of problem behaviours in children with ASD (Dixon et al., 2023). -mediated strategies in managing challenging behaviours in children with ASD (Bearss et al., 2020; Cridland et al., 2022).

In Malaysia, there are very few published studies that have evaluated the effectiveness of the implementation of parent-assisted interventions for addressing challenging behaviours of children with ASD (Ooi et al., 2021; Neik et al., 2023). However, preliminary data from pilot studies have provided initial evidence to suggest that developing a parent or child partnership within the service delivery system can positively impact the social, emotional, and behavioural functioning of children with ASD (Neik et al., 2023).

Various systematic reviews conducted internationally further demonstrate that parent-mediated interventions can improve the relationship between parents and their children, as well as their use of shared attention, and abilities to communicate adaptively; however, the impact that these interventions have on the level of stress reported by parents varies by study (Oono et al., 2013; Rogers et al., 2021, Cridland et al., 2022). Additionally, ABA has been used as an established evidence-based approach throughout the world to help reduce problem behaviours and increase adaptive skills, with prolonged parental involvement as a critical factor for achieving long-term outcomes (Leaf et al., 2021; Peters-Sheffer et al., 2022).

Nonetheless, research conducted in Malaysia suggests that inconsistency in parental involvement occurs because of issues such as stress for parents, accessibility to services, and opportunities to receive training; therefore, the need for strengthening the parental support system is evident (Karst & Van Hecke, 2022; Neik et al., 2023). Positive Behaviour Support (PBS) and Prevent-Teach-Reinforce (PTR) also have substantial international evidence that they can reduce problem behaviours through function-based and quality-of-life-focused approaches (Carr et al., 2020; Dunlap et al., 2021; Gore et al., 2022). While there is a lack of research on PBS and PTR in Malaysia, they both show great potential for cultural adaptation, due to their structured approach to being implemented by parents.

According to Malaysian literature, there remain barriers preventing the ability to implement sustainable interventions within the context of Parent-Mediated Interventions which include lack of access to formalized parent training programs, lack of structured programs, and no culturally adapted intervention models (Rahman et al., 2021, Ooi et al., 2021). Whereas internationally, parent training is typically delivered through structured parent training programs, coaching, or telehealth models/use of technology; all have demonstrated improved fidelity of implementation, reduced behaviour severity; and been able to do so in low-resource settings (Brookman-Fraze et al., 2021; Ferguson et al., 2022).

Thus, there is substantial evidence to support the effectiveness of Parent-Mediated Function-Based Interventions such as ABA, PBS, PTI. These International Models of Parent-Mediated Function-Based Interventions have strong histories of empirical support as well as established delivery mechanisms; while the literature on Parent-Mediated Function-based Interventions in Malaysia is limited and emerging, there is a strong need to develop and implement scalable, culturally responsive Parent-Training Frameworks within the Local Service Systems (Bears et al., 2020; Dunlap et al., 2021; Neik et al., 2023).

7. Existing Guidelines and Models for parents in managing challenging behaviour among children with ASD

Numerous evidence-based models and guidelines have been developed for assisting parents in effective behaviour management of children with ASD due to the prevalence and seriousness of challenging behaviours exhibited by children with ASD. Recent studies have highlighted that parents play a significant role in implementing these strategies; therefore, they are in the best position to implement these strategies consistently in their child's natural environment (Bears et al., 2020; Cridland et al., 2022).

Many of these parent-mediated interventions are built upon established frameworks, such as Applied Behaviour Analysis (ABA), Positive Behaviour Support (PBS), and Prevent-Teaching-Reinforcing (PTR). All these approaches view challenging behaviours as having a functional basis and place importance on the use of proactive strategies, the development of skills, and the reinforcement of adaptive behaviours (Carr et al., 1999; Dunlap et al., 2010). Many of these models have been further adapted into structured parent-training programs, telehealth service delivery, and culturally responsive applications, which have made the models relevant in a variety of family contexts (Gore et al., 2022; Parsons et al., 2023). The main guidelines and approaches that can be used to manage challenging behaviours in children with ASD, along with their principles and supporting research, can be found in Table 3.

Table 3: Key models and guidelines that inform parental management of challenging behaviour in children with ASD

Model / Guideline	Description	Research Guideline Support
Applied Behaviour Analysis (ABA)	A structured behavioural framework that uses reinforcement, functional assessment, and systematic teaching to reduce challenging behaviour and increase adaptive skills. Parent training in ABA principles supports consistent implementation in daily life.	Classic research demonstrates ABA’s effectiveness in reducing challenging behaviour and improving adaptive functioning (Lovaas, 1987; Smith, 2001).
		Recent work supports ABA’s continued effectiveness in emotional and social domains and its adaptability in parent training (BMC Psychology, 2024; Bearss et al., 2020).
Positive Behaviour Support (PBS)	A person-centred, function-based approach that emphasises understanding the purpose of behaviour and replacing challenging behaviours with adaptive alternatives through environmental modification and skill building.	Early PBS research documented reductions in challenging behaviour and improved quality of life for individuals with developmental disabilities (Carr et al., 1999; Horner et al., 1990).
		Contemporary synthesis shows PBS is effective in ASD populations when parents are trained in functional assessment and proactive adjustments (European Proceedings, 2018; Gore et al., 2022).
Prevent–Teach–Reinforce (PTR)	A structured intervention grounded in PBS that focuses on function-based behaviour support by preventing challenging behaviour, teaching alternative behaviours, and reinforcing positive responses. Parent engagement is integral.	Initial PTR work showed significant reductions in school-aged challenging behaviour (Dunlap et al., 2010).
		More recent evaluations highlight feasibility and positive outcomes when parents deliver PTR components in home settings (PTR systematic application; McKenney et al., 2022; European Proceedings, 2018).
Parent-Mediated Interventions (PMIs)	Programs that train parents to implement behavioural and developmental strategies in everyday contexts to enhance adaptive behaviour and reduce challenging behaviour.	Foundational studies indicated that parent-training reduces disruptive behaviour (Warren et al., 2010; Bearss et al., 2013).
		Recent meta-analyses confirm that PMIs improve adaptive skills and reduce problem behaviours, particularly when structured training and coaching are provided (PMI systematic reviews, 2021; 2023).
Research Units in Behavioural Intervention (RUBI)	A manualised caregiver training programme specifically for ASD disruptive behaviour, delivered with modelling, role play, and feedback to parents.	Initial RUBI trials showed promising reductions in challenging behaviour versus parent education alone (Bearss et al., 2015).
		Recent RCTs show effectiveness across settings including telehealth delivery (RUBI telehealth, 2024; Bearss et al., 2020).
Internet-based Parent Training (ABA/NDBI)	Online or mobile modules teaching parents ABA principles and behaviour management techniques, increasing accessibility.	Early frameworks for online parent training demonstrated feasibility (Ingersoll & Berger, 2015).
		Recent research supports telehealth and digital ABA/NDBI training’s positive impact on parent implementation competence and child

		behaviour (Springer Link, 2022; Parsons et al., 2023).
Naturalistic Developmental Behavioural Interventions (NDBIs)	Interventions combining behavioural and developmental principles delivered in natural settings, with parents coached to embed strategies into play and daily routines.	Early NDBI evidence showed improvements in communication and engagement (Schreibman et al., 2015; Dawson et al., 2010).
		Recent systematic reviews support parent-mediated NDBIs for social communication gains and reductions in behaviour challenges (NDBI reviews, 2021; 2023).
Parent-Child Interaction Therapy (PCIT) Adapted for ASD	A live coaching model focusing on enhancing parent–child interactions and reducing externalising behaviours through positive reinforcement and consistent responses.	PCIT originally demonstrated effectiveness in general behaviour problems (Eyberg et al., 2001).
		More recent adaptations for ASD show reductions in externalising behaviour and improvements in interaction quality, though broader research is emerging (PCIT ASD adaptations, 2020; 2022).

Parent-mediated approaches, which include Function-based interventions, have consistently been shown to be the best practice model for managing difficult behaviours in children with ASD. ABA, PBS, PTR, RUBI, and NDBIs are some theoretical models that address behavioural function and have been effective in reducing difficult behaviours and improving overall parental and child functioning; however, this has been supported in research studies (Bearss et al., 2015; Schreibman et al., 2015; McKenney et al., 2022).

There is strong evidence for the effectiveness of systemic parent training and ongoing parent coaching in ensuring the fidelity of an intervention, as well as having the intended outcomes generalised, and reducing parental stress (Warren et al., 2010; Bearss et al., 2020). New models of delivery (i.e., Telehealth service delivery and online parent training) increase accessibility and applicability of services for families, especially in low- to middle-income areas (Divan et al., 2021; Parsons et al., 2023).

8. Proposed Conceptual Framework for Parental Management of Challenging Behaviour in ASD

This theoretical framework provides a parent centred understanding of complex behaviours associated with ASD. The framework provides a thorough understanding of complex behaviours caused by ASD and then incorporates recent evidence and theoretical developments regarding child or parent interactions as well as environmental contexts and methods of responding to behavioural challenges as they occur to assist with developing appropriate intervention strategies.

Conceptual Framework

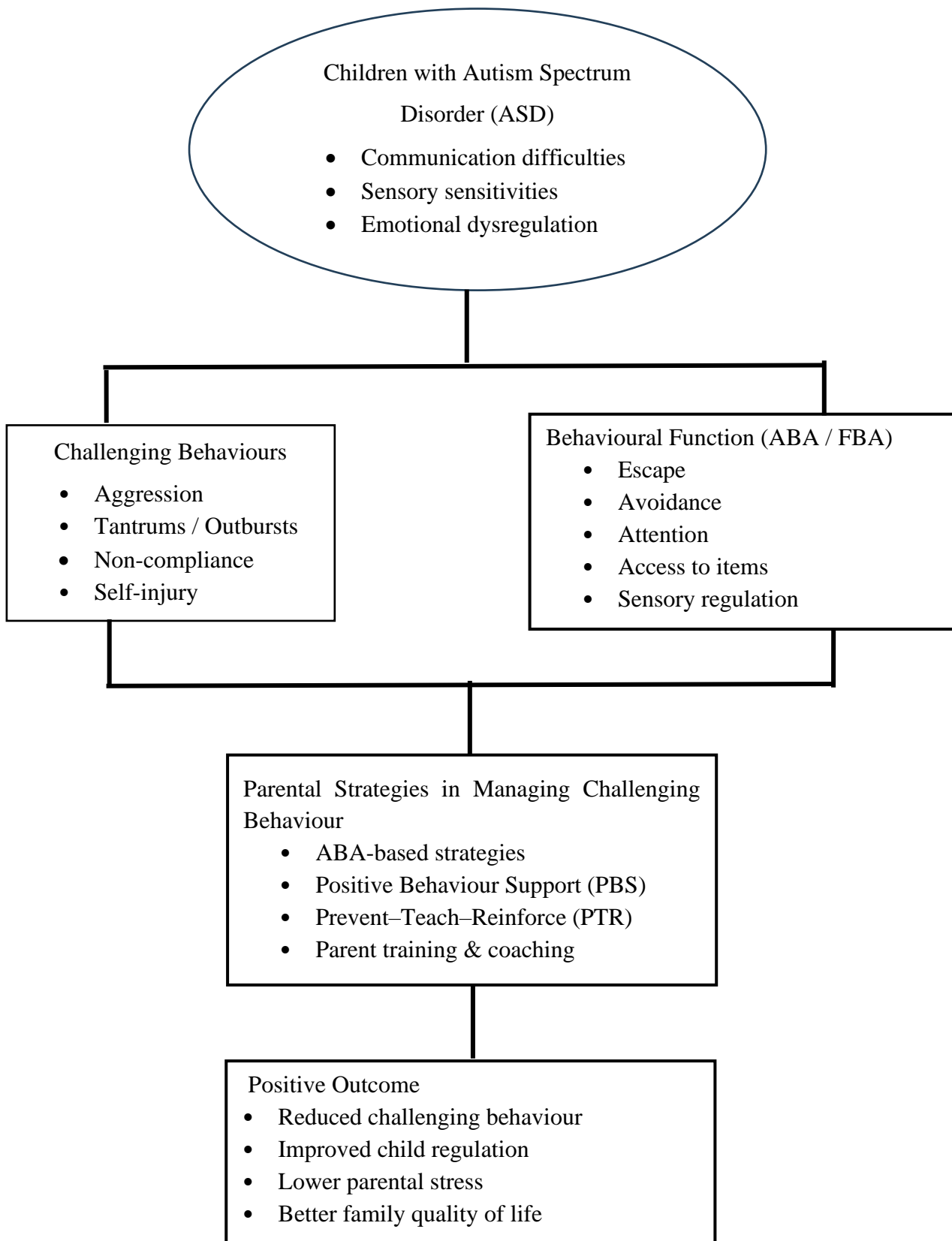


Figure 1: Proposed Conceptual Framework for Parental Management of Challenging Behaviour in Children with Autism Spectrum Disorder (ASD)

8.1 Core Elements of the Framework

The proposed framework is composed of four interconnected domains:

a) Child Factors

Challenging behaviour of children with ASD is defined by the core characteristics associated with ASD and will be inclusive of communication difficulties, sensory processing issues, emotional dysregulation and executive function challenges. Multiple research studies support that children with communication deficits and impairment in emotional regulation are at an increased risk of exhibiting aggressive behaviours, tantrums or noncompliance or self-injurious behaviours (Brookman-Frazer et al., 2021) and that when insufficient supports are in place, a child's sensory sensitivity can further increase demands on the child from the environment, resulting in greater escalation of challenging behaviours (Tseng et al., 2022).

b) Purpose of Behaviour

Challenging behaviours will be considered functional for an individual under both behavioural theory and ABA because the behaviour provides the individual with access to preferred items, escape from demands, attention from others or sensory stimulation. Thus, understanding behaviour through FBAs is critical to successfully addressing challenging behaviours (Hanley et al., 2022; McGill et al., 2023). FBA provides the foundation for how parents apply evidence-based interventions in their home environment and differentiates the efficacy of intervention strategies from punitive or reactive measures.

c) Parental and Family Influences

The Child Behavior Framework adopts a systems perspective to position parents as key agents of change in their child's behavior at home. The following influences impact the effectiveness of behavior management strategies: Parents' mental health; stress, parenting styles, behaviors, beliefs and self-efficacy affect both the effectiveness with which parents implement behavior management strategies, and the strategies themselves (Neece et al., 2022; Yorke et al., 2023). Research conducted in Malaysia and throughout Asia demonstrates that high levels of caregiver stress negatively impact the ability of parents to use behavior management techniques consistently as there is a corresponding increase in reactive responses (Ooi et al., 2021; Neik et al., 2023).

d) Environmental and Sociocultural Factors

The Framework uses ecological and biocological perspectives to represent behaviors of concern within the broader environmental system, including home routines, school expectations, available services, cultural and socio-economic barriers. Parents in Malaysia experience structural barriers such as a lack of services available to them; financial stressors on families and stigma; limited access to parent training that impacts their management of their child's behaviors (Rahman et al., 21 Divan et al., 21). These contextual factors may moderate parent levels of stress, as well as the likelihood of parent accessing intervention services.

8.2 Role of Parent-Mediated Interventions

At the center of the framework are parent-mediated, function-based interventions, especially those from Positive Behavior Support (PBS) and the Prevent-Teach-Reinforce (PTR) model. Positive Behavior Support (PBS) is a multi-element, value-driven framework based on applied behavior analysis. It focuses on functional assessment and multi-component interventions to prevent challenging behaviors and replace them with adaptive skills. This approach aims to improve quality of life outcomes for individuals with developmental challenges (Littlefair et al., 2024). The Prevent-Teach-Reinforce (PTR) model turns these principles into a structured

process. This process includes preventing problem behavior, teaching equivalent skills, and systematically reinforcing adaptive behaviors (Dunlap et al., 2015; Sears et al., 2013).

These approaches combine behavioral principles with family-centered values, focusing on:

- a) Prevent challenging behavior through antecedent modification. This involves identifying environmental triggers and changing routines before behaviors occur as part of the functional assessment and intervention planning (Dunlap et al., 2015).
- b) Teaching equivalent communication and coping skills. This means embedding replacement skills into daily routines that match the functions of the target behavior (Dunlap et al., 2015).
- c) Reinforcing adaptive and socially appropriate behaviors. This is done by applying reinforcement strategies that fit the identified behavioral function to increase desirable behaviors (Dunlap et al., 2015).

Recent studies demonstrate that parents can implement PBS and PTR based strategies with high fidelity, leading to sustained reductions in challenging behaviour and improvements in family quality of life (Bearss et al., 2020; Cridland et al., 2022; McTiernan et al., 2023). Importantly, these models are adaptable to culturally diverse settings, making them particularly relevant for the Malaysian context.

8.2 Dynamic and Bidirectional Relationships

The proposed framework emphasises that relationships among domains are bidirectional and dynamic. Child behaviour influences parental stress and coping, while parental responses and environmental supports shape behavioural outcomes over time. Effective intervention is therefore conceptualised not as a single technique, but as a continuous, adaptive process that aligns child needs, parental capacity, and contextual realities (Brookman-Fraze et al., 2021; Hsiao et al., 2021).

8.4 Relevance to Malaysia and Similar Contexts

This framework tackles a significant issue in Malaysia, where there is a shortage of structured, culturally relevant guidelines for parents. By combining internationally recognized evidence-based models with local sociocultural factors, the framework offers a conceptual basis for creating parent training programs, clinical directives, and policy initiatives that are practical, sustainable, and centered around families (Neik et al., 2023).

8.5 Summary of the Framework

In conclusion, the suggested conceptual framework views challenging behaviour in individuals with ASD as driven by functional factors, shaped by the environment, and significantly affected by interventions led by parents. It emphasizes the role of parents as essential agents of change, aided by evidence-based approaches like ABA, PBS, and PTR, all within an ecologically sensitive cultural framework. This framework provides a clear structure to inform upcoming research, the design of interventions, and the creation of comprehensive guidelines for parental management.

Figure 1 shows a framework meant to help understand and manage challenging behaviours in children with autism spectrum disorder (ASD) using a parent-led intervention approach (Bearss et al., 2020; Cridland et al., 2022). This framework is based on evidence that indicates child-related factors, including communication issues, differences in sensory processing, emotional

regulation problems, and executive functioning difficulties, mainly contribute to challenging behaviours in children with ASD (Frazier et al., 2022; Kerns et al., 2020; Mazurek et al., 2019).

In this framework, challenging behaviours are viewed according to their behavioural function. This includes escaping demands, trying to get access to tangible items or social attention, or seeking sensory regulation. This aligns with the principles of antecedent-behaviour-consequence (ABC) analysis and Applied Behaviour Analysis (ABA) (Cooper et al., 2020; Hanley et al., 2014). The focus of the framework highlights parent-led, function-based interventions that are informed by functional behaviour assessment (FBA). It builds on Positive Behaviour Support (PBS) and the Prevent-Teach-Reinforce (PTR) model (Dunlap et al., 2015; McTiernan et al., 2023).

These intervention approaches use strategies to modify antecedents, teach functionally similar communication and coping skills, and reinforce adaptive and socially appropriate behaviours in natural settings like home (Dunlap et al., 2018; Sears et al., 2013). Research shows that parents can carry out PBS- and PTR-based interventions effectively, leading to significant decreases in challenging behaviours and better child functioning (Bearss et al., 2020; McTiernan et al., 2023). Besides child-related factors, the framework also considers parental variables such as parental stress, mental health needs, parenting styles, and parenting confidence. These are seen as influencing both child behaviour and how well interventions work (Neece et al., 2019; Yorke et al., 2018).

This two-way relationship is explained by family systems theory. It suggests that child behaviour and family functioning affect each other over time (Cox & Paley, 2003; Minuchin, 1985). Surrounding these central elements, broader environmental and sociocultural factors like service availability, cultural beliefs, economic limitations, and societal stigma shape parental practices and access to support. This aligns with ecological and bioecological models of child development (Bronfenbrenner & Morris, 2006; Divan et al., 2021).

The framework emphasizes the dynamic interactions between child characteristics, parental ability, and environmental contexts. It highlights the need for culturally sensitive, parent-centered approaches to managing challenging behaviours (Cridland et al., 2022; Divan et al., 2021). Such culturally responsive, parent-led models are especially important for Malaysia and other low- and middle-income countries where there are few specialist services, and strong family involvement requires sustainable, home-based intervention methods (Franz et al., 2018; Rahman et al., 2016).

9. Implication for Research and Practice

This conceptual review highlights that parent-mediated interventions grounded in behavioural and family-centred approaches are effective in reducing challenging behaviours in children with ASD. However, more research is needed to find the most effective parts of these interventions and to improve how they are used in different settings. Specifically, long-term studies that focus on mechanisms are needed to better understand how parent-child strategies affect child behaviour and parental well-being over time. Short-term studies may not fully show the lasting effects on families (Bearss et al., 2020; Cridland et al., 2022; Neece et al., 2022; Yorke et al., 2023). There is a strong need for research that respects cultural differences, particularly in low- and middle-income countries like Malaysia.

In these places, sociocultural beliefs, stigma, and limited access to services shape how parents get involved in interventions. Current evidence supports structured parent training programs based on Applied Behaviour Analysis (ABA), Positive Behaviour Support (PBS), and the Prevent-Teach-Reinforce (PTR) framework. These programs have been shown to effectively reduce challenging behaviour in children and lower parental stress when done properly (Bears et al., 2020; McTiernan et al., 2023; Neik et al., 2023; Ooi et al., 2021). It's important to consider parental mental health and coping skills as key parts of behaviour intervention, since these factors directly affect how consistent and effective the treatment is. On a broader level, using telehealth for parent coaching and community-based service models can improve access in areas with limited resources. Overall, these findings highlight the importance of creating guidelines and policies that are accessible and culturally relevant, prioritizing parent-focused, evidence-based methods for managing challenging behaviour in children with ASD (Brookman-Fraze et al., 2021; Divan et al., 2021; Hsiao et al., 2021; McKenney et al., 2022; Park et al., 2023).

10. Future Research Direction

- a) **Longitudinal and Individualized Evaluation of Behavioural Interventions** Future research should focus on long-term and individualized assessment studies. These should look at how parent-mediated strategies, including ABA, PBS, and PTR, impact patterns of challenging behaviour and family quality of life over time. Such studies would help clarify sustainability and individual differences in response to intervention (Whitehouse et al., 2020; Oono et al., 2013).
- b) **Cost-Effectiveness and Quality-of-Life Outcomes** Rigorous research is needed on the cost-effectiveness of parent-mediated and function-based interventions. This includes examining how economic factors influence access, persistence, and overall quality of life for children and families across different service delivery models (Rodgers et al., 2020; Whitehouse et al., 2020).
- c) **Diversity and Inclusivity in Intervention Studies** Future studies should include more diverse participant samples based on age, race, socioeconomic status, and co-occurring conditions, especially within educational and community settings. Broadening the representativeness of research populations will help generalize findings to culturally diverse environments and under-researched groups (Systematic review; Interventions for challenging behaviour of autistic students, 2024).
- d) **Technology-Enhanced and AI-Supported Behaviour Assessment** Emerging technologies, such as artificial intelligence and machine learning, offer promising ways to improve behaviour assessment, personalize intervention adjustments, and monitor in real time. These tools could help parents better identify behavioural functions and customize support strategies more effectively, and should be systematically evaluated (Meng et al., 2025).
- e) **Integration of Remote Delivery and Telehealth Models** Although telehealth parent training has proven feasible, more large-scale research is necessary to understand how remote delivery affects fidelity, dosage, family involvement, and child behaviour outcomes in rural and resource-limited settings (Ferguson et al., 2022; Remote intervention feasibility).
- f) **Cultural Adaptation and Local Context Research** There is a crucial need for research focused explicitly on culturally adapted parent training models. These models should

consider local beliefs, service infrastructure, and caregiver expectations in low- and middle-income countries, such as Malaysia. This research will ensure that evidence-based frameworks are valid and effective across different sociocultural contexts (Neik et al., 2023; Divan et al., 2021).

- g) Combined Intervention Approaches Future work should investigate integrated intervention strategies that combine behavioural methods with social, emotional, and communication components, along with support for parental mental health. This approach aims to maximize overall family functioning and child outcomes. Research testing multimodal packages can clarify how these combined strategies work together (Meng et al., 2025).

11. Conclusion

Autism Spectrum Disorder (ASD) related challenging behaviours in children are a multifaceted problem that not only impacts the child but also the parent and the family. This conceptual paper reviews the latest literature on the topic, emphasizing that challenging behaviours are most accurately viewed as a functionally significant response to the environment, shaped by the characteristics of the child, the parent, and the environment. Research from Malaysian and global studies has found that parental stress and family quality of life are more closely related to challenging behaviours than the presence and severity of core ASD symptoms, emphasizing the pivotal role of parents in managing challenging behaviours.

The literature search has revealed parent-mediated, function-based interventions based on Applied Behaviour Analysis (ABA), Positive Behaviour Support (PBS), and Prevent-Teach-Reinforce (PTR) approaches as effective strategies in managing challenging behaviours. These approaches focus on understanding behavioural function, reducing environmental triggers, teaching adaptive skills, and reinforcing positive behaviours in natural family routines. However, these approaches are impacted by parental stress, mental health, and access to training and support, emphasizing the need to address parental well-being in addition to child-focused strategies.

Comparative analysis has revealed that while international settings may provide formal parent training programs and standardized guidelines, Malaysian parents may be left to manage challenging behaviours with limited access to evidence-based resources, turning instead to informal and self-directed strategies. Sociocultural factors, service availability, and economic conditions also impact the use of interventions. In conclusion, this paper emphasizes the need for culturally informed, parent-centered approaches that combine behavioural strategies with parental support to enhance outcomes for children with ASD and their families.

Acknowledgement

The authors would like to express sincere gratitude to everyone who contributed, both directly and indirectly, to the completion of this study. The authors would like to thank the UNITAR International University for providing the supports for this study.

Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this study. This study was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.; DSM-5) <https://www.psychiatry.org/psychiatrists/practice/dsm>
- Bearss, K., Burrell, T. L., Stewart, L. M., & Scahill, L. (2020). Parent training in autism spectrum disorder: What's in a name? *Clinical Child and Family Psychology Review*, 23(2), 217–233. <https://doi.org/10.1007/s10567-015-0179-5>
- Bearss, K., Johnson, C., Smith, T., Lecavalier, L., Swiezy, N., Aman, M., Scahill, L. (2020). Effect of parent training vs parent education on behavioural problems in children with autism spectrum disorder: A randomized clinical trial. *JAMA Psychiatry*, 77(4), 356–365. <https://doi.org/10.1007/s10567-015-0179-5>
- Bowen, M. (1978). *Family therapy in clinical practice*. New York, NY: Jason Aronson. <https://pubmed.ncbi.nlm.nih.gov/34867556/>
- Brookman-Fraee, L., Stadnick, N., Roesch, S., Regan, J., & Barnett, M. (2021). Involving parents in interventions for children with autism spectrum disorder: A meta-analysis. *Journal of Child Psychology and Psychiatry*, 62(1), 1–14. <https://pubmed.ncbi.nlm.nih.gov/25898050/>
- Brookman-Fraee, L., Stadnick, N., Chlebowski, C., Baker-Ericzén, M., & Ganger, W. (2021). Characterizing psychiatric and behavioural intervention delivery in community settings for children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 51(2), 525–540. <https://pubmed.ncbi.nlm.nih.gov/34867556/>
- Bronfenbrenner, U. (1977) Toward an experimental ecology of human development. *American Psychologist*, 32(7). <http://doi.apa.org/getdoi.cfm?doi=10.1037/0003066X.32.7.513>
- Carr, E. G., Dunlap, G., Horner, R. H., Koegel, R. L., Turnbull, A. P., Sailor, W., Anderson, J. L., Albin, R. W., Koegel, L. K., & Fox, L. (2002). Positive behaviour support: Evolution of an applied science. *Journal of Positive Behaviour Interventions*, 4(1), 4–16. <https://doi.org/10.1177/109830070200400102>
- Carr, E. G., Dunlap, G., Horner, R., Koegel, R., Turnbull, A., Sailor, W., et al. (2020). Positive behavior support for people with developmental disabilities: A research synthesis. *American Journal on Intellectual and Developmental Disabilities*, 125(1), 1–25. [https://doi.org/10.1352/0895-8017\(2002\)107<0321:>2.0.CO;2](https://doi.org/10.1352/0895-8017(2002)107<0321:>2.0.CO;2)
- Cridland, E. K., Jones, S. C., Magee, C. A., & Caputi, P. (2022). Family-focused autism spectrum disorder research: A review of parent-mediated interventions. *Autism Research*, 15(2), 183–198. <https://onlinelibrary.wiley.com/journal/19393806>
- Cridland, E. K., Jones, S. C., Caputi, P., & Magee, C. A. (2022). Being a parent of a child with autism spectrum disorder: An integrative review of the literature. *Journal of Child and Family Studies*, 31(2), 473–489. <https://link.springer.com/journal/10826>
- Dellapiazza, F., Vernhet, C., Blanc, N., Miot, S., Schmidt, R., & Baghdadli, A. (2022). Links between sensory processing, adaptive behaviour, and emotional regulation in children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 52(4), 1672–1685. <https://pubmed.ncbi.nlm.nih.gov/36441430/>
- Divan, G., Vajaratkar, V., Cardozo, P., Huzurbazar, S., Verma, M., & Patel, V. (2021). The feasibility and effectiveness of parent-mediated interventions for children with autism spectrum disorder in low-resource settings. *Autism Research*, 14(2), 245–258. <https://pubmed.ncbi.nlm.nih.gov/30095230/>
- Divan, G., Vajaratkar, V., Desai, M. U., Strik-Lievers, L., & Patel, V. (2021). Challenges, coping strategies, and unmet needs of families with autism spectrum disorder in low-

- and middle-income countries: A systematic review. *Autism*, 25(3), 759–774.
<https://pubmed.ncbi.nlm.nih.gov/22473816/>
- Dunlap, G., Strain, P. S., Fox, L., Carta, J. J., Conroy, M., Smith, B. J., Kern, L., Hemmeter, M. L., Timm, M. A., McCart, A., & Sailor, W. (2020). Prevention and intervention with young children’s challenging behaviour: Perspectives regarding current knowledge. *Behavioural Disorders*, 45(1), 3–17
<https://www.tandfonline.com/doi/full/10.1177/0198742920915187>
- Dunlap, G., Iovannone, R., Kincaid, D., Wilson, K., & Christiansen, K. (2021). Prevent–Teach–Reinforce: Addressing problem behaviours of students with disabilities through functional assessment. *Behavioural Disorders*, 46(1), 3–17.
<https://www.tandfonline.com/doi/full/10.1177/0198742920947290>
- Gore, N. J., McGill, P., Toogood, S., Allen, D., Hughes, J. C., Baker, P., Hastings, R. P., & Noone, S. J. (2022). Definition and scope for positive behaviour support. *International Journal of Positive Behavioural Support*, 12(1), 3–17.
<https://www.bild.org.uk/wp-content/uploads/2020/01/Definition-and-scope-for-positive-behavioural-support.pdf>
- Hanley, G. P., Jin, C. S., Vanselow, N. R., & Hanratty, L. A. (2022). Producing meaningful improvements in problem behaviour of children with autism via synthesized analyses and treatments. *Journal of Applied Behaviour Analysis*, 55(1), 3–23.
<https://pubmed.ncbi.nlm.nih.gov/24615474/>
- Hsiao, Y. J., Higgins, K., Pierce, T., Whitby, P. J., & Tandy, R. D. (2021). Parental stress, family quality of life, and family–professional partnerships in families of children with autism spectrum disorder. *Research in Developmental Disabilities*, 112, 103903.
<https://doi.org/10.1016/j.ridd.2021.103903>
- Hagopian, L. P., Boelter, E. W., & Jarmolowicz, D. P. (2020). Reinforcement-based treatment of severe problem behaviour. *Behaviour Analysis in Practice*, 13(2), 399–421.
<https://doi.org/10.1007/s40617-020-00430-z>
- Kanne, S. M., & Mazurek, M. O. (2021). Aggression in children and adolescents with ASD: Prevalence and risk factors. *Autism*, 25(6), 1658–1671. <https://doi.org/10.1007/s10803-010-1118-4>
- Kay, M. A., Karaca, M. A., Çelik, O. T., & Kaçmaz, C. (2025). Difficulties faced by children with autism spectrum disorders after an earthquake: A study from parents’ perspectives. *Scientific Reports*, 15, 39258. <https://pubmed.ncbi.nlm.nih.gov/41214011/>
- Karst, J. S., & Van Hecke, A. V. (2022). Parent involvement in autism intervention: A meta-analytic review. *Autism*, 26(2), 361–377.
<https://onlinelibrary.wiley.com/journal/14606940>
- Leung, R. C., Vogan, V. M., Powell, T. L., Anagnostou, E., & Taylor, M. J. (2022). The role of executive function in emotional and behavioural regulation in autism spectrum disorder. *Autism Research*, 15(3), 479–491.
<https://onlinelibrary.wiley.com/journal/19393806>
- Leaf, J. B., Leaf, R., McEachin, J., Taubman, M., & Cihon, J. H. (2021). Applied Behaviour Analysis is a science and evidence-based practice. *Behaviour Analysis in Practice*, 14(3), 692–703. <https://doi.org/10.1007/s40617-021-00602-6>
- McClellan, B., Grey, I., & McCracken, M. (2021). An evaluation of positive behaviour support for families of children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 51(9), 3141–3154.
<https://pubmed.ncbi.nlm.nih.gov/17846050/>
- McKenney, E. L. W., MacDonald, R. P. F., & McIntyre, L. L. (2022). Telehealth parent coaching interventions for children with autism spectrum disorder: A systematic review. *Review Journal of Autism and Developmental Disorders*, 9(2), 192–207.
<https://journals.sagepub.com/action/doSearch?AllField=McClellan+Grey+McCracken+M>

[cGill+2021](#)

- McTiernan, A., Leader, G., Healy, O., & Mannion, A. (2023). Challenging behaviour in autism spectrum disorder: A systematic review of parent-mediated interventions. *Journal of Autism and Developmental Disorders*, 53(4), 1356–1372. <https://link.springer.com/article/10.1007/s10803-022-05875-0>
- Mazefsky, C. A., Herrington, J., Siegel, M., Scarpa, A., Maddox, B. B., Scahill, L., & White, S. W. (2021). The role of emotion regulation in autism spectrum disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*, 60(6), 697–708. [https://www.jaacap.org/article/S0890-8567\(21\)00128-7/fulltext](https://www.jaacap.org/article/S0890-8567(21)00128-7/fulltext)
- Mazefsky, C. A., & White, S. W. (2023). Emotion dysregulation in autism spectrum disorder: Conceptualization, assessment, and treatment implications. *Autism*, 27(1), 5–18. <https://onlinelibrary.wiley.com/doi/10.1177/1362361320970849>
- Neece, C. L., Green, S. A., & Baker, B. L. (2022). Parenting stress and child behaviour problems: A transactional relationship in autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 52(6), 2573–2585. <https://pmc.ncbi.nlm.nih.gov/articles/PMC4861150/>
- Neik, T. K., Lee, L. W., Low, H. M., Chia, N. K. H., & Chua, Y. P. (2023). Parenting stress, coping strategies, and social support among parents of children with autism spectrum disorder in Malaysia. *International Journal of Environmental Research and Public Health*, 20(4), 3147. <https://www.mdpi.com/1660-4601/20/4/3147>
- Ooi, K. L., Ong, Y. S., Jacob, S. A., & Khan, T. M. (2021). A meta-synthesis on parenting a child with autism spectrum disorder: Malaysian parents’ perspectives. *Journal of Autism and Developmental Disorders*, 51(6), 1898–1916. <https://doi.org/10.2147/NDT.S100634>
- Oono, I. P., Honey, E. J., & McConachie, H. (2013). Parent-mediated early intervention for young children with autism spectrum disorders. *Cochrane Database of Systematic Reviews*, (4). <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009774.pub2/full>
- Park, J., Lee, J., & Kim, Y. (2023). Coping strategies and psychological well-being among parents of children with autism spectrum disorder. *Journal of Developmental and Physical Disabilities*, 35(2), 275–292. <https://link.springer.com/journal/10882/volumes-and-issues/35-2>
- Peters-Scheffer, N., Didden, R., Korzilius, H., & Sturmey, P. (2022). A meta-analytic study on the effectiveness of ABA-based interventions. *Research in Autism Spectrum Disorders*, 94, 101965. <https://doi.org/10.1016/j.rasd.2010.03.011>
- Rogers, S. J., Estes, A., Lord, C., Vismara, L., Winter, J., Fitzpatrick, A., et al. (2021). Effects of a parent-mediated intervention on parent–child interaction. *Journal of the American Academy of Child & Adolescent Psychiatry*, 60(2), 226–236. <https://doi.org/10.1016/j.jaac.2012.08.003>
- Strain, P. S., Dunlap, G., Fox, L., Carta, J. J., & Conroy, M. (2021). Leveraging parent–professional partnerships using the Prevent–Teach–Reinforce model. *Topics in Early Childhood Special Education*, 41(2), 107–119. <https://journals.sagepub.com/doi/fullsearch?field1=AllField&text1=Prevent-Teach-Reinforce+parent+professional+partnerships+2021>
- Tseng, M. H., Fu, C. P., Cermak, S. A., Lu, L., & Shieh, J. Y. (2022). Emotional and behavioural challenges in children with autism spectrum disorder: Associations with sensory processing. *Research in Autism Spectrum Disorders*, 89, 101864. <https://doi.org/10.1016/j.rasd.2022.101864>
- World Health Organization. (2023). *Autism spectrum disorders: Key facts*. Author. <https://www.who.int/news-room/fact-sheets/detail/autism-spectrum-disorders>
- Yorke, I., White, P., Weston, A., Rafla, M., Charman, T., & Simonoff, E. (2023). The

association between child behaviour and parental mental health in autism spectrum disorder. *Journal of Child Psychology and Psychiatry*, 64(2), 186–196. <https://onlinelibrary.wiley.com/journal/14606940>

Yorke, I., White, P., Weston, A., Rafla, M., Charman, T., & Simonoff, E. (2023). The association between emotional and behavioural problems in children with autism and parental mental health. *Autism*, 27(1), 153–165.

<https://onlinelibrary.wiley.com/journal/14697610>

Yorke, I., White, P., Weston, A., Rafla, M., Charman, T., & Simonoff, E. (2023). The relationship between parenting stress and child behaviour in autism. *Autism*, 27(1), 90–103. <https://onlinelibrary.wiley.com/journal/14606940>

Zeidan, J., Fombonne, E., Scolah, J., Ibrahim, A., Durkin, M. S., Saxena, S., & Elsabbagh, M. (2022). Global prevalence of autism: A systematic review update. *Autism Research*, 15(5), 778–790. <https://doi.org/10.1002/aur.2696>