



# Exploring Coping Strategies of Mothers Navigating Stress in Raising Children with Autism: A Review

Mona Alice Marbaniang · Apurba Saha

Received: 20 December 2023 / Accepted: 16 July 2024

© The Author(s), under exclusive licence to Springer Nature India Private Limited 2024

**Abstract** In contrast to other developmental disorders, Autism Spectrum Disorder (ASD) poses a challenge in early diagnosis due to the absence of a clear biological marker. The resulting uncertainty, complexity, and ambiguity make coping challenging for parents, inducing heightened anxiety and tension compared to parents of non-disabled children. This review explores diverse coping mechanisms employed by mothers facing stress and challenges in raising children with autism. Utilizing databases such as PubMed, Google Scholar, and PsycINFO, we identified 18 studies meeting inclusion criteria—original research in the last 15 years, involving mothers as primary caregivers of children with autism, and focusing on coping strategies. Findings highlight adaptive strategies like problem-focused and engagement coping, effective against maternal stress and contributing to enhanced well-being. Conversely, maladaptive coping pathways, including self-blame and avoidance, reveal associations with heightened anxiety, depression, and psychological distress in families dealing with ASD. To support mothers effectively, interventions should prioritize promoting coping strategies such as seeking support, acceptance, positive thinking, and actively addressing challenges.

**Keywords** Autism · Mothers · Primary caregivers · Coping skills · Coping mechanisms

## Background

Autism Spectrum Disorder (ASD), according to the American Psychiatric Association (2013), is a neurodevelopmental condition with diverse manifestations, reflecting the spectrum nature of the disorder. It involves persistent deficits in social communication, interaction, and repetitive behaviours, impacting daily functioning. The global prevalence is estimated at about one in 100 children, with a rising diagnostic rate attributed to increased awareness (Zeidan et al., 2022). In India, with a population exceeding 1.3 billion, it is estimated that over 2 million individuals, mainly children below 15 years of age, might be affected by ASD (Krishnamurthy, 2008).

In contrast to other developmental disorders, ASD lacks a distinct biological marker, making early diagnosis challenging due to the absence of definitive testing. Consequently, the prognosis for autism is fraught with uncertainty, adding complexity and ambiguity to the disorder which makes it challenging for the parents to cope (Dillenburger, 2002; Gupta & Singhal, 2005).

Parenting a child with autism often induces more anxiety and tension compared to parents of non-disabled children, requiring substantial effort, time, and patience (Sanders & Morgan, 1997; Picardi et al.,

---

M. A. Marbaniang (✉) · A. Saha (✉)  
Social Work Department, Tezpur University, Tezpur,  
Assam, India  
e-mail: swp21102@tezu.ac.in

2018). Previous studies highlight that certain behavioral, social, and cognitive traits of children with ASD contribute to increased psychological distress in parents (Gupta & Singhal, 2005; Estes et al., 2009; Hamlyn-Wright et al., 2007). Mothers, usually the primary caregivers, experience heightened parenting stress in caring for a child with ASD (Phetrasuwan & Shandor Miles, 2009; Bohadana et al., 2021; Tunali & Power, 2002).

Coping with stress poses a significant challenge (Dardas & Ahmad, 2015; Smith et al., 2008). According to Lazarus and Folkman (1984), coping involves the behavioral and cognitive abilities to manage internal and external demands during stressful situations, with two proposed mechanisms: problem-focused, addressing stressors directly, and emotion-focused, dealing with associated emotions. Hastings et al. (2005) identified four coping categories for parents of children with ASD: active-avoidance, problem-focused, positive coping, and religious/denial. Coping critically influences stress mastery, determining adaptability or maladapt ability (Lyons et al., 2010; Brown et al., 2020). A parent's ability to handle high stress associated with a child with ASD depends on the efficacy and quantity of coping mechanisms (Zablotsky et al., 2013). In this context, active-avoidance and religious/denial coping are reported as maladaptive for mothers, linked to reduced well-being, increased depression, anxiety, and stress (Seymour et al., 2013). This review aims to explore the diverse coping mechanisms employed by mothers navigating stressful situations and challenges associated with raising children with autism.

## Materials and Method

### Electronic Database Searching

A literature search was conducted using broad search terms to be inclusive of articles examining the coping responses of mothers who are the primary caregivers of children with autism. To access relevant literature on the subject, various databases, such as PubMed, Google Scholar, and PsycINFO, were searched. These databases were chosen due to their coverage of pertinent subject matter and key areas, ensuring the retrieval of relevant articles. The following keyword search terms were used “autism spectrum disorder

OR autism” AND “primary caregivers OR caregivers” AND “mothers” AND “coping mechanisms OR coping strategy OR coping responses OR coping skills.”

### Study Selection Criteria

The studies were included using the following selection criteria:

#### Inclusion Criteria:

1. Original research studies in the last 15 years
2. Samples including mothers who are primary caregivers of children with autism
3. Studies focusing mainly on coping strategies, coping skills, and coping mechanisms of mothers of children with ASD.

#### Exclusion Criteria:

1. Studies that include coping of other family members.
2. Studies which are not published.

### Data Extraction

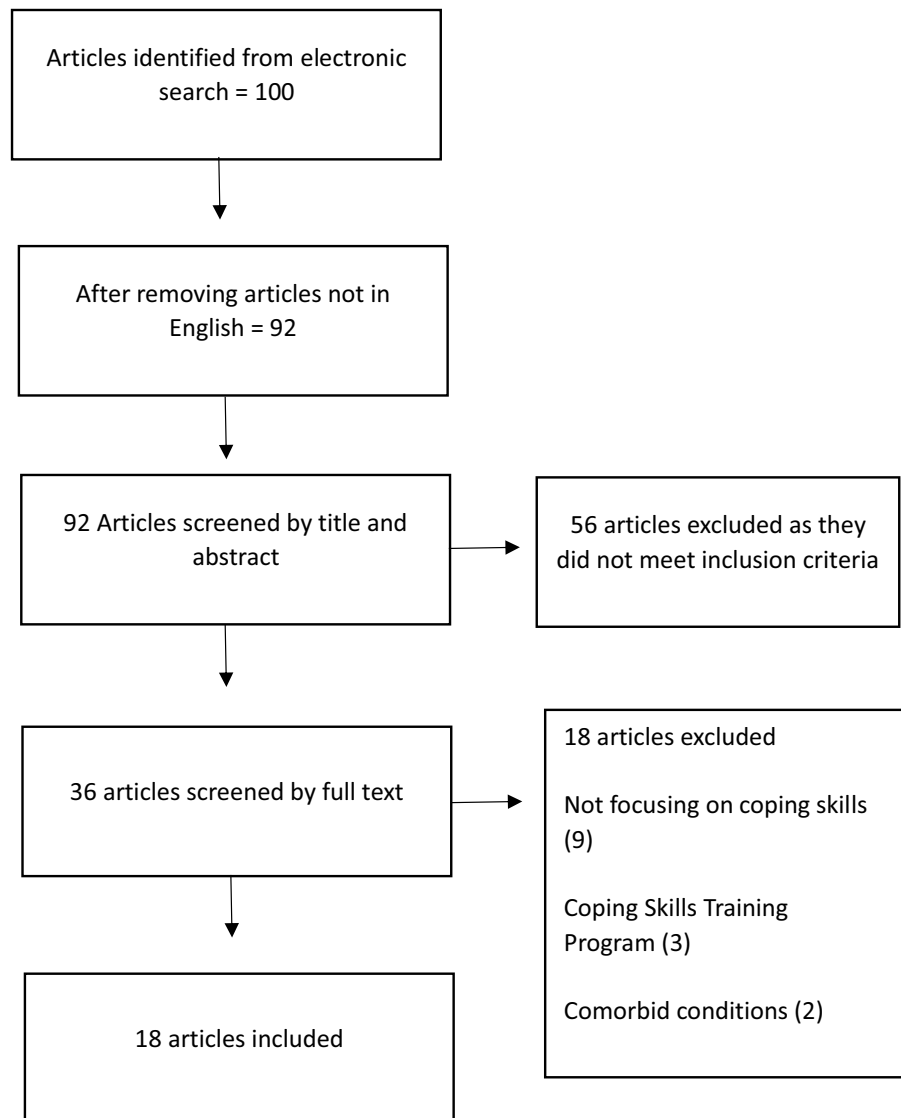
The extracted data were assessed based on eligibility criteria. The literature search identified 98 references from different database. The articles were evaluated based on relevance, appropriateness, clarity, and methodology. Selection of reviewed articles were done using the PRISMA flow diagram (see Fig. 1). A total of 90 articles were screened by title and abstract. The included studies had varying designs, reporting styles, research methodology, systematic review and abstract. The researcher screened each article and excluded unrelated studies based on the eligibility. Finally, sixteen studies were included in this review (see Table 1).

## Results

### Summary of Findings

Numerous research studies have demonstrated that employing adaptive and healthy coping mechanisms directly contributes to improved well-being and

**Fig. 1** PRISMA flow diagram showing the study selection process



quality of life. In a study conducted to understand how mothers of children with ASD utilize diverse coping strategies, findings revealed that positive predictors such as instrumental and emotional support, acceptance, positive reframing, active coping, and religious beliefs are significantly related to a higher quality of life. On the contrary, self-blame, distraction, and substance abuse are identified as negative predictors inversely related to the overall well-being of these mothers (Shukla, 2019).

In a separate investigation, 50 mothers were examined through the utilization of the Ways of Coping questionnaire (WCQ), and it was found that engaging

in problem-focused coping was associated with positive psychological well-being and a heightened reliance on avoidant coping strategies was linked to increased levels of anxiety and depression among the participants (Cai et al., 2020).

In a study conducted at a children's hospital in Athens, Greece, examining the coping strategies of mothers with children diagnosed with Autism Spectrum Disorder (ASD), 143 participants were surveyed. Results revealed that mothers with higher education levels tended to score lower in both the total F-COPES and the specific aspect of reframing. Increased time devoted to child care and managing

**Table 1** Characteristics of included studies

References	Aim	Study design/Methods	Participants	Methods/Assessment measures used for COPING
Cai et al. (2020)	To characterize the way in which intolerance of uncertainty and coping (avoidant and problem-focused) predict mental health and psychological wellbeing in parents of children with ASD	Not defined	Fifty mothers of children with ASD	The ways of coping questionnaire
Ntre et al. (2022)	To investigate the coping strategies used by mothers of children with autism spectrum disorder (ASD) and their relation to maternal stress and depression	Cross sectional	One hundred and forty-three (143) mothers of children with ASD	Family Crisis Oriented Personal Scales (F-COPES)
Qodariah and Puspitasari (2016)	To examine the relationship between mothers' levels of patience and their coping strategies when raising children with autism	Cross sectional	10 mothers of children with ASD	The Ways of Coping Questionnaire
Kiami and Goodgold (2017)	To understand support needs and coping strategies among mothers of children with ASD, and how these factors may predict maternal stress	Not defined	A total of 70 mothers raising a child with ASD	The Coping Health Inventory for Parents (CHIP)
Kuhaneck et al. (2010)	To explore mothers' shared experiences with effective coping strategies when raising a child with ASD	Qualitative approach	Eleven mothers, each with a child with ASD, participated in the study	Semi structured interviews with open-ended questions
Zaidman- Zait (2020)	To examine whether maternal executive functions and active engaged coping were related to dyadic affective flexibility and positive mutual affective interactions between mothers and their young children with ASD	Cross sectional	The participants were 40 mother-child dyads	Brief COPE
Predescu et al. (2013)	To assess irrational beliefs, negative automatic thoughts, emotional distress, cognitive coping strategies and the relation between them, in mothers of children with ASD	Cross sectional	65 mothers having a child with diagnosis of ASD	Cognitive-Emotional Regulation Questionnaire (CERQ)

**Table 1** (continued)

References	Aim	Study design/Methods	Participants	Methods/Assessment measures used for COPING
Benson (2010)	To investigate the structure of coping strategies used by mothers of children with autism and to assess the relationship of those empirically derived coping dimensions to maternal mental health	Cross sectional	113 mothers	Brief COPE
Al-Kandari et al. (2017)	To assess the socio- demographic factors, as well as family management and coping strategies	Cross sectional	198 mothers	Brief COPE
Benson (2014)	To assess the effects of four coping strategies (engagement, disengagement, distraction, and cognitive reframing) on multiple measures of maternal adjustment over a 7 years period	Cohort sequential design	113 mothers	Brief COPE
Marshall and Long (2010)	To examine the ways in which coping is revealed in the content and structure of stories told by five mothers of children with autism	Narrative approach	Five mothers	
Seymour et al. (2013)	To investigate the influence of maternal fatigue and coping on the relationship between children's problematic behaviours and maternal stress	Cross sectional	65 mothers	Brief COPE
Miranda et al. (2019)	To investigate the mediating role of behavioral difficulties, coping strategies, and social functional support in the relationship between symptoms severity and parenting stress in mothers of children with ASD	Not defined	52 mothers	Brief COPE
Rasoulpoor et al. (2023)	To determine the relationship between care burden with coping styles and resilience of mothers of children with ASD	Descriptive-analytical	69 mothers	Coping strategies questionnaire (CSQ)

**Table 1** (continued)

References	Aim	Study design/Methods	Participants	Methods/Assessment measures used for COPING
Selvakumar and Panicker (2020)	To assess the quality of life, coping styles, and symptoms of depression, anxiety, and stress in mothers of children with ASD	Cross sectional	30 mothers	COPE Inventory
Smith et al. (2008)	To examine the impact of autism symptoms and coping strategies on the well-being of mothers of children with autism spectrum disorder (ASD)	Cross sectional	153 mothers of toddlers and 201 mothers of adolescents	Coping Orientations to Problems Experienced (COPE)
Jose et al. (2021)	To assess perceived stress, level of spousal support, emotion-focused coping styles, and other potentially associated factors among mothers accompanying children diagnosed with ASD	Cross sectional	99 mothers of a child up to 18 Years of age with ASD	Coping Orientations to Problems Experienced (COPE)
Malhotra et al. (2020)	To study coping as a determinant of Quality of Life of mothers of children with intellectual disability (ID) and children with autism	Not defined	The sample consisted of 100 mothers of children (between 5 and 12 years of age), ID (n = 50) or autism (n = 50)	The ways of coping questionnaire

medication schedules correlated with lower scores in the reframing aspect. The reframing subscale showed a negative correlation with parental distress, suggesting that lower scores were linked to higher levels of distress. Additionally, the passive appraisal coping strategy was positively correlated with depressive symptoms (Ntre et al., 2022).

In a correlational study, Qodariah et al. (2016), sought to examine the relationship between mothers' levels of patience and their coping strategies when raising children with autism. Findings indicated a positive correlation, suggesting that higher levels of patience, particularly in managing the challenges associated with parenting a child with autism, were associated with more effective coping.

In a different study utilizing the Coping Health Inventory for Parents (CHIP), it was observed that as the use of helpful coping strategies increased, maternal stress scores exhibited a decrease. On average, mothers employed approximately 33 coping strategies, with 81% of them reported as beneficial. The coping strategy deemed most effective among participants was "believing that my child will get better." Conversely, strategies such as "explaining our family situation to friends and neighbours so they will understand" and "eating" were identified as the least helpful. Additionally, the least frequently employed strategy was "going out with my spouse on a regular basis" (Kiami & Goodgold, 2017).

Eleven mothers who participated in in-depth interviews revealed that the most effective coping mechanisms for them included spending time alone, making plans ahead of time, educating themselves, changing the way they saw their problems, and collaborating with their spouse. Less assistance was reported from formal support groups (Kuhaneck et al., 2010).

In another study that used the Brief COPE scale, it was found that mothers who used more active engaged coping strategies and those with enhanced sustained attention engaged more in mutual positive affect with their child (Zaidman-Zait, 2020).

Efforts to evaluate coping strategies and their connections to irrational beliefs and emotional distress showed that mothers who participated in the study demonstrated a positive and statistically significant correlation between coping strategies like self-blame, catastrophizing, and rumination, and emotional distress. Moreover, both self-blame and catastrophizing strategies were positively and significantly correlated

with irrational beliefs. These results suggest that engaging in maladaptive coping strategies is linked to heightened levels of irrational beliefs and emotional distress (Predescu et al., 2013).

A longitudinal study involving 113 mothers yielded findings that linked the use of avoidant coping strategies, such as distraction and disengagement, to higher levels of anger and depression in mothers, while cognitive reframing was linked to higher levels of maternal well-being. There were multiple cases where the impact of coping on maternal outcomes was mitigated by the characteristics of the child, specifically the degree of maladaptive behaviour (Benson, 2010).

In another investigation employing brief COPE, results indicate that mothers predominantly relied on the coping strategies of "Religion," "Acceptance," and "Positive Reframing" whereas the least utilised coping strategies were behavioural disengagement, denial, and humour (Al-Kandari et al., 2017).

In a study employing a cohort sequential design and multilevel modeling with a sample of 113 mothers, the effects of four coping strategies (engagement, disengagement, distraction, and cognitive reframing) on various measures of maternal adjustment were examined over a 7-year period. The findings revealed that an increased use of disengagement and distraction was associated with a gradual decline in maternal adjustment over time. On the other hand, an enhanced utilization of cognitive reframing was linked to improved maternal outcomes. Additionally, the results suggested that the application of different coping strategies at times moderated the effects of child behaviour on maternal adjustment (Benson, 2014).

In an attempt to explore manifestations of coping present in both the content and form of the stories told by a group of mothers of children with autism, five mothers were interviewed, and the narratives revealed a prominence of cognitive coping strategies in life stories, emphasizing the emotional and cognitive experiences of the storytellers. Moreover, discrete coping episodes in the stories provided insights into behavioural coping strategies implemented in specific situations (Marshall & Long, 2010).

Another study underscored a notable connection between elevated levels of fatigue in mothers and the adoption of maladaptive coping strategies, such as self-blame and disengagement. This, in turn, was linked to heightened maternal stress.

Another investigation demonstrated a negative correlation between engagement coping and social functional support. Through multiple mediation analysis, it was found that engagement coping and behavioural difficulties served as significant mediators in the association between ASD symptoms and parenting stress. Notably, the engagement variable exhibited a more pronounced effect in this relationship (Miranda et al., 2019).

Another research investigation employing the Coping Strategies Questionnaire observed that mothers commonly employed emotion-focused and avoidant coping styles, with the problem-focused style being the least frequently utilized (Rasoulpoor et al., 2023).

In the case of mothers with toddlers, maintaining lower levels of emotion-focused coping and higher levels of problem-focused coping was generally linked to improved maternal well-being, irrespective of the degree of child symptomatology. Conversely, for mothers with adolescents, coping mechanisms frequently served as a protective factor, particularly when autism symptoms were elevated (Selvakumar & Panicker, 2020).

In a study conducted in Kerala, India, researchers utilized the 16-item scale developed by Carver (1989), which encompasses four domains of emotion-based coping strategies: positive reinterpretation, acceptance, religiosity, and emotional support. The study placed particular emphasis on emotion-based coping strategies, focusing on the emotional experiences of mothers. The findings revealed that acceptance, an emotion-focused coping style, emerged as a significant dimension and demonstrated an association with maternal stress levels. Moreover, the study highlighted the protective role of acceptance, indicating that mothers who accept their child's autism diagnosis may experience better mental health and emotional resilience compared to those who struggle to accept it. In terms of emotional support, the study underscored the high importance of support from spouses (Jose et al., 2021).

In another study aimed at understanding whether coping strategies serve as determinants of the quality of life (QoL) of mothers, it was revealed that specific coping mechanisms significantly influenced their QoL. The findings indicated that mothers who utilized confrontative coping, distancing, self-control, accepting responsibility, and escape avoidance as coping processes tended to report lower QoL scores.

Conversely, those who employed coping strategies such as seeking social support, planful problem-solving, and positive reappraisal tended to have higher QoL scores. This suggests that the nature of coping strategies adopted by mothers can significantly impact their overall quality of life (Malhotra et al., 2020).

## Discussion

The findings from numerous research studies on mothers of children with Autism Spectrum Disorder (ASD) reveal significant insights into coping strategies and their impact on maternal well-being. Adaptive coping mechanisms are consistently associated with improved quality of life. Positive predictors, including instrumental and emotional support, positive reframing, active coping, acceptance, and religious beliefs, are linked to higher maternal well-being.

Building upon the foundation of adaptive coping mechanisms, mothers navigating the challenges of raising children with Autism Spectrum Disorder (ASD) often turn to their spouses as a primary source of support. This reliance on spousal understanding and assistance highlights the crucial role of interpersonal relationships in maternal coping (Kuhaneck et al., 2010; Higgins et al., 2005). While spousal support is acknowledged as moderately beneficial, the proactive nature of coping strategies becomes evident as mothers actively engage in problem-focused coping, taking intentional steps to address stressors and improve their overall well-being (Selvakumar & Panicker, 2020).

Problem-focused coping or active coping is the process of taking active steps to try to remove or circumvent the stressor and its effects (Selvakumar & Panicker, 2020). Problem-focused strategies have been shown to lower stress levels in parents and improve their quality of life (Wang et al., 2013; Lai & Oei, 2014; Cappe et al., 2011). The commitment to problem-focused coping is notably complemented by the utilization of positive reframing strategies, a cognitive process that involves defining problems in more optimistic terms to sidestep discouragement. This adaptive approach to interpreting challenges positively emerges as a frequently employed and highly effective coping response for mothers



facing the stressors associated with ASD parenting (Kuhaneck et al., 2010; Luther et al., 2005). The significance of positive reframing is further underscored by its association with lower levels of depression and stress symptoms, as indicated in various studies (Selvakumar & Panicker, 2020; Lloyd & Hastings, 2008; Pakenham et al., 2005). Beyond individual coping strategies, the exploration of support-seeking behaviours reveals that mothers, in addition to their proactive coping efforts, often seek solace and understanding from their spouses, emphasizing the interconnectedness of emotional support and coping strategies in the maternal journey of ASD (Kuhaneck et al., 2010; Higgins et al., 2005).

As we delve into the multifaceted realm of coping mechanisms, the role of religious beliefs emerges as a complex aspect of parental coping with the challenges posed by raising children with Autism Spectrum Disorder (ASD). Selvakumar's study takes a closer look, revealing that religious coping is a prevalent and commonly employed strategy, aligning with findings from previous research in India and Kuwait that highlight the solace and endurance provided by religious practices in stressful situations (Ekas et al., 2009; Kuhaneck et al., 2010).

Extending the exploration of religious coping, additional studies in Kuwait and Poland shed light on the widespread adoption of religion as a coping strategy among mothers. While the significance of religion in providing meaning and buffering stress is evident in previous research (Krok, 2008; Al Kandari et al. 2017), the complexities of its impact are further underscored by the findings of Ekas et al. (2009). This complexity is highlighted by their discovery that, despite religious beliefs and spirituality being associated with improved parental mental health, greater involvement in religious activities may lead to heightened distress. In understanding coping through religious aspect, it is important to recognize different opinions on how to classify it. Factor analyses from different studies (Kuhaneck et al., 2010; Hastings et al., 2005), reveal discrepancies in classifying religious coping as either beneficial or aligning it with denial. This shows that using religious coping is complex and can take various forms in different situations (Kuhaneck et al., 2010).

While adaptive coping strategies contribute to improved well-being, the scenario shifts when it comes to maladaptive coping approaches such as

self-blame, distraction, and substance abuse. Studies consistently link higher usage of avoidant coping to anxiety and depression, underlining the critical impact of coping strategies on overall mental health (Hastings et al., 2005; Su et al., 2018).

As these maladaptive coping patterns unfold, families dealing with a child's mental disorder often find themselves grappling with heightened psychological distress. Research by Abbeduto et al., 2004; Benson 2014; and Predescu et al., 2013, suggests a notable association between psychological distress and the increased adoption of maladaptive coping, particularly strategies like emotion-focused coping and avoidance.

Echoing these findings, Stuart and McGrew (2009) observed a detrimental impact of maladaptive coping on the challenges experienced by parents raising children with autism. Moreover, studies shed light on the heightened vulnerability of parents of children with autism to mental health issues, with an increased likelihood of hospitalization and psychiatric distress (Predescu et al., 2013; Selvakumar & Panicker, 2020).

In conclusion, the intricate interplay between adaptive and maladaptive coping strategies significantly shapes the well-being of mothers raising children with Autism Spectrum Disorder (ASD). While adaptive strategies like problem-focused coping and engagement coping emerge as effective shields against maternal stress and contributors to enhanced psychological well-being, maladaptive coping pathways, encompassing self-blame and avoidance, paint a contrasting picture. The literature consistently underscores the far-reaching consequences of maladaptive coping, revealing associations with heightened anxiety, depression, and psychological distress in families dealing with ASD. As we navigate these complexities, it becomes evident that fostering a supportive environment that encourages adaptive coping mechanisms is pivotal for the holistic well-being of both parents and children in the context of ASD.

#### Governmental Support Programmes

In order to understand the various support systems provided by different countries for mothers and parents caring for children with autism spectrum disorder (ASD), this review has incorporated a few government-supported programs, schemes, and initiatives. These programs aim to address the unique needs and

challenges faced by individuals with ASD and their families. By comparing the outcomes of the coping strategies identified in this study with the support systems offered by different governments, a comprehensive model has been developed to assess the effectiveness and sustainability of the support provided. This model allows for a systematic comparison between the coping strategies identified in this review and the existing government-supported programs, shedding light on areas of alignment, gaps, and opportunities for improvement.

Many government-sponsored programs and initiatives designed to address autism spectrum disorder (ASD) primarily focus on providing assistance and services to children diagnosed with ASD, with fewer resources directed towards supporting caregivers directly. However, even if government-supported programs primarily target individuals with autism, the support and services provided to the child can

indirectly benefit the caregiver. For instance, access to specialized therapy services and educational support can contribute to the child’s overall development and well-being, potentially reducing caregiver stress and enhancing their quality of life. Additionally, programs that promote community inclusion and social integration for individuals with autism may create opportunities for caregivers to connect with other families, share experiences, and access informal support networks (Reupert et al., 2015) (Fig. 2). However, it is essential to note that these programs may inadvertently overlook the significant role that parents and caregivers play in the lives of individuals with ASD. As a result, there may be gaps in the support available to parents or caregivers, particularly in areas such as access to respite care, caregiver support services, mental health support, and resources for coping strategies. Therefore, while acknowledging the importance of government-supported programs

**Fig. 2** Comparative model of outcome of study and government-supported programs for mothers/parents of children with ASD

Type of Support	Outcome of Study	Government-Supported Programs
Education	- Accessible educational resources	- Switzerland: Strategy for facilitating vocational training for individuals with ASD
	- Advocacy for educational accommodations	- France and Norway: Emphasis on early detection and diagnosis
		- United Kingdom: Autism Act of 2009 mandates the formulation of a strategy to enhance support services for adults with ASD
Therapy	- Accessible to treatment	- Australia: Inclusive Support Program by the Victorian Department of Education and Early Childhood Development (DEECD)
	- Stress management techniques	- China: Rehabilitation support program for ASD targeting low-income families
Financial Assistance	- Seek financial assistance for therapy costs	- Switzerland: Financial assistance for vocational training
	- Budgeting and financial planning	- China: Annual financial assistance for rehabilitation expenses for ASD children from low-income households
		- India: Niramaya health insurance scheme provides coverage for individuals with autism, cerebral palsy, mental retardation, and disabilities

for individuals with ASD, it is crucial to also recognize the need for comprehensive support systems that address the needs of both individuals with ASD and their parents or caregivers. This holistic approach ensures that families receive the support they need to thrive and navigate the challenges associated with raising a child with ASD.

Figure 3 provides a comprehensive comparison of the coping strategies identified in this review study. By linking each intervention to its short-term, and long-term outcomes, this model highlights both the direct and indirect benefits to caregivers. This structured approach not only underscores the effectiveness and scope of existing coping strategies but also

identifies gaps and areas for potential enhancement. The model aims to provide a holistic understanding of how different types of support contribute to improving the well-being and resilience of both caregivers and children with ASD.

**Limitations**

While the review paper on coping strategies of mothers with children with autism offers valuable insights, it is crucial to recognize certain limitations, biases, and constraints that could affect how we interpret and apply the findings.

**Fig. 3** Intervention-oriented outcome model

<b>Interventions</b>	<b>Activities/Inputs</b>	<b>Short-term Outcomes</b>	<b>Long-term Outcomes</b>
<b>Stress Management</b>	Workshops, online resources, support groups	Reduced caregiver stress	Improved mental health and well-being
<b>Cognitive-Behavioral Therapy (CBT)</b>	Therapy sessions, CBT training programs	Better coping mechanisms	Enhanced quality of life
<b>Financial Planning</b>	Financial counseling, budgeting workshops, financial assistance for therapy costs	Reduced financial stress	Improved financial stability, sustainable access to therapy services
<b>Early Intervention Programs</b>	Access to early intervention services, therapy for children	Improved child development	Increased independence and social skills
<b>Educational Support Services</b>	Special education programs, Individualized Education Plans (IEPs)	Better educational outcomes for children	Enhanced academic and social development
<b>Caregiver Support Groups</b>	Regular support group meetings, counseling for caregivers	Emotional support and shared experiences	Reduced caregiver isolation and burnout

In the included studies 14 out of 16 studies use the likert-type scales. While likert type scales are widely used in social science research for measuring attitudes, opinions, and perceptions, they are not without their limitations. Likert scales, with their limited response options, may not fully capture people's true feelings, leading to less accurate measurements. Respondents may choose neutral options when uncertain, creating a bias. Some may consistently pick extreme options without careful consideration, distorting results. Social desirability bias can also affect responses. Likert scales are influenced by question context, wording, and order, posing challenges in cross-cultural comparisons. They may not capture subtle attitude changes over time. Researchers should be aware of these limitations and consider combining Likert scales with other methods for more reliable social science research (Kusmaryono et al., 2022; Hasson & Arnetz, 2005; Subedi, 2016).

Apart from that, these studies predominantly focus on coping strategies in Western contexts. Research exploring how cultural differences may influence coping mechanisms among mothers in diverse cultural settings is lacking. This leaves a gap in understanding how cultural differences may influence coping mechanisms among mothers in diverse cultural settings. Moreover, many studies only examine the immediate impact of coping strategies, which limits the understanding of the impact due to the evolving nature of these strategies over time. Furthermore, there is limited exploration of how maternal coping strategies directly impact the well-being and development of children with ASD. Additionally, many studies also utilized quantitative measures, which restricted the range of responses from the participants.

Moreover, our review focused exclusively on peer-reviewed published articles, possibly overlooking relevant information from grey literature. While delving deeply into coping mechanisms, we may have missed broader aspects. Factors like socio-economic status, cultural influences, and family dynamics are crucial for a more comprehensive understanding of the experiences of mothers of children with autism.

#### Future Implications & Recommendations

Future research could benefit from more extensive and longitudinal studies (Cai et al., 2020; Smith et al., 2008) involving diverse samples, which would

include mothers from varied cultural backgrounds, socioeconomic statuses, or family structures. This would provide a more comprehensive understanding of the long-term effects of coping strategies on maternal well-being. Further qualitative research could explore in-depth the coping mechanisms mothers find most effective. This could involve examining the specific factors influencing the effectiveness of certain coping strategies and understanding how these strategies evolve over time. While many studies focus on mothers, future research should also explore the coping strategies of fathers or other family members who are the primary caregivers of children with ASD. Understanding their unique challenges and coping mechanisms can provide a more holistic picture of family dynamics. Furthermore, understanding how the maternal coping strategies may have a potential impact on the well-being of the child with ASD can also be explored. This can help in developing interventions that would benefit both mothers and children (Cai et al., 2020). Apart from that, comparative studies to assess coping strategies should be conducted among mothers of children with ASD and other parental groups. This comparative analysis could shed light on the unique aspects of coping in the context of ASD. Moreover, researchers should examine the differential impact of coping strategies based on the severity of ASD symptoms, comorbidities, and the specific needs of the child. This can inform interventions that are tailored to the individual characteristics of children with ASD. Finally, exploration of how culture and societal support impact mother's coping with the challenges of raising a child with ASD is also crucial.

To best support mothers of children with ASD, interventions and support programs should focus on promoting helpful coping strategies like seeking support, acceptance, positive thinking, and actively addressing challenges. Problem-solving skills are crucial, so interventions should emphasize building these skills. Programs should also identify mothers who may be at risk of using harmful coping methods like self-blame or substance abuse and provide personalized strategies to improve overall well-being.

Parental training programs should include education on effective coping, considering that higher levels of patience and problem-focused coping contribute to better coping for mothers. These implications emphasize the need for a comprehensive and

personalized approach, considering individual differences, developmental stages, and the evolving nature of coping strategies.

## Conclusion

In conclusion, this review paper has synthesized findings from 18 selected studies focusing on the coping mechanisms of mothers raising children with Autism Spectrum Disorder (ASD). The studies collectively underscore the significance of adaptive coping strategies and problem-focused coping in promoting maternal well-being. However, it is important to acknowledge the limitations, biases, and constraints inherent in the predominantly Western-centric nature of the studies. The review, while providing in-depth insights into coping mechanisms, emphasizes the need for a more comprehensive understanding that considers socio-economic status, cultural influences, and family dynamics. Future research should aim for greater diversity in samples and explore the long-term impact of coping strategies, fostering a holistic approach to supporting mothers of children with ASD.

**Author contributions** All authors contributed to the study conception and design. All authors read and approved the final manuscript.

**Funding** The authors declare that no funds, grants, or other support were received during the preparation of this manuscript. The authors have no relevant financial or non-financial interests to disclose.

## Declarations

**Conflict of interest** The author declare that they have no conflict of interest.

## References

- Abbeduto, L., Seltzer, M. M., Shattuck, P., Krauss, M. W., Orsmond, G., & Murphy, M. M. (2004). Psychological well-being and coping in mothers of youths with autism, down syndrome, or fragile X syndrome. *American journal on mental retardation*, *109*(3), 237–254.
- Al-Kandari, S., Alsalem, A., Abohaimed, S., Al-Orf, F., Al-Zoubi, M., Al-Sabah, R., & Shah, N. (2017). Brief report: Social support and coping strategies of mothers of children suffering from ASD in Kuwait. *Journal of autism and developmental disorders*, *47*, 3311–3319.
- Association American Psychiatric. (2013). *Diagnostic and statistical manual of mental disorders*. American Psychiatric Publishing.
- Benson, P. R. (2010). Coping, distress, and well-being in mothers of children with autism. *Research in Autism Spectrum Disorders*, *4*(2), 217–228.
- Benson, P. R. (2014). Coping and psychological adjustment among mothers of children with ASD: An accelerated longitudinal study. *Journal of autism and developmental disorders*, *44*, 1793–1807.
- Bohadana, G., Morrissey, S., & Paynter, J. (2021). Self-compassion in mothers of children with autism spectrum disorder: A qualitative analysis. *Journal of Autism and Developmental Disorders*, *51*(4), 1290–1303.
- Brown, M., Whiting, J., Kahumoku-Fessler, E., Witting, A. B., & Jensen, J. (2020). A dyadic model of stress, coping, and marital satisfaction among parents of children with autism. *Family Relations*, *69*(1), 138–150.
- Cai, R. Y., Uljarević, M., & Leekam, S. R. (2020). Predicting mental health and psychological wellbeing in mothers of children with autism spectrum disorder: Roles of intolerance of uncertainty and coping. *Autism Research*, *13*(10), 1797–1801.
- Cappe, E., Wolff, M., Bobet, R., & Adrien, J. L. (2011). Quality of life: a key variable to consider in the evaluation of adjustment in parents of children with autism spectrum disorders and in the development of relevant support and assistance programmes. *Quality of Life Research*, *20*, 1279–1294.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, *56*(2), 267.
- Dardas, L. A., & Ahmad, M. M. (2015). Coping strategies as mediators and moderators between stress and quality of life among parents of children with autistic disorder. *Stress and Health*, *31*(1), 5–12.
- Dillenburger, K., Keenan, M., Gallagher, S., & McElhinney, M. (2002). Autism: Intervention and parental empowerment. *Child Care in Practice*, *8*(3), 216–219.
- Ekas, N. V., Whitman, T. L., & Shivers, C. (2009). Religiosity, spirituality, and socioemotional functioning in mothers of children with autism spectrum disorder. *Journal of autism and developmental disorders*, *39*, 706–719.
- Estes, A., Munson, J., Dawson, G., Koehler, E., Zhou, X. H., & Abbott, R. (2009). Parenting stress and psychological functioning among mothers of preschool children with autism and developmental delay. *Autism*, *13*(4), 375–387.
- Gupta, A., & Singhal, N. (2005). Psychosocial support for families of children with autism. *Asia Pacific Disability Rehabilitation Journal*, *16*(2), 62–83.
- Hamlyn-Wright, S., Draghi-Lorenz, R., & Ellis, J. (2007). Locus of control fails to mediate between stress and anxiety and depression in parents of children with a developmental disorder. *Autism*, *11*(6), 489–501.
- Hasson, D., & Arnetz, B. B. (2005). Validation and findings comparing VAS vs. Likert scales for psychosocial measurements. *International Electronic Journal of Health Education*, *8*, 178–192.
- Hastings, R. P., Kovshoff, H., Brown, T., Ward, N. J., Espinosa, F. D., & Remington, B. (2005). Coping strategies in

- mothers and fathers of preschool and school-age children with autism. *Autism*, 9(4), 377–391.
- Higgins, D. J., Bailey, S. R., & Pearce, J. C. (2005). Factors associated with functioning style and coping strategies of families with a child with an autism spectrum disorder. *Autism*, 9(2), 125–137.
- Jose, P., Sundaram, S., & Varma, R. P. (2021). Buffering effect of spousal support on stress levels in mothers of children with a diagnosis of autism spectrum disorder in Kerala, India. *Journal of neurosciences in rural practice*, 12(03), 535–542.
- Kiami, S. R., & Goodgold, S. (2017). Support needs and coping strategies as predictors of stress level among mothers of children with autism spectrum disorder. *Autism research and treatment*, 2017.
- Krishnamurthy, V. (2008). A clinical experience of autism in India. *Journal of Developmental & Behavioral Pediatrics*, 29(4), 331–333.
- Krok, D. (2008). The role of spirituality in coping: Examining the relationships between spiritual dimensions and coping styles. *Mental health, religion and culture*, 11(7), 643–653.
- Kuhaneck, H. M., Burroughs, T., Wright, J., Lemanczyk, T., & Darragh, A. R. (2010). A qualitative study of coping in mothers of children with an autism spectrum disorder. *Physical & occupational therapy in pediatrics*, 30(4), 340–350.
- Kusmaryono, I., Wijayanti, D., & Maharani, H. R. (2022). Number of Response Options, Reliability, Validity, and Potential Bias in the Use of the Likert Scale Education and Social Science Research: A Literature Review. *International Journal of Educational Methodology*, 8(4), 625–637.
- Lai, W. W., & Oei, T. P. S. (2014). Coping in parents and caregivers of children with autism spectrum disorders (ASD): A review. *Review Journal of Autism and Developmental Disorders*, 1, 207–224.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.
- Lloyd, T., & Hastings, R. P. (2008). Psychological variables as correlates of adjustment in mothers of children with intellectual disabilities: cross-sectional and longitudinal relationships. *Journal of Intellectual Disability Research*, 52(1), 37–48.
- Luther, E. H., Canham, D. L., & Cureton, V. Y. (2005). Coping and social support for parents of children with autism. *The Journal of School Nursing*, 21(1), 40–47.
- Lyons, A. M., Leon, S. C., Roecker Phelps, C. E., & Dunleavy, A. M. (2010). The impact of child symptom severity on stress among parents of children with ASD: The moderating role of coping styles. *Journal of child and family studies*, 19, 516–524.
- Malhotra, S., Khan, W., & Bhatia, M. S. (2020). Types of coping as a determinant of quality of life of mothers of children with intellectual disability and autism. *Indian Journal of Psychiatric Social Work*, 11(1).
- Marshall, V., & Long, B. C. (2010). Coping processes as revealed in the stories of mothers of children with autism. *Qualitative health research*, 20(1), 105–116.
- Miranda, A., Mira, A., Berenguer, C., Rosello, B., & Baixauli, I. (2019). Parenting stress in mothers of children with autism without intellectual disability. Mediation of behavioral problems and coping strategies. *Frontiers in psychology*, 10, 464.
- Ntre, V., Papanikolaou, K., Amanaki, E., Triantafyllou, K., Tzavara, C., & Kolaitis, G. (2022). Coping Strategies in mothers of children with autism spectrum disorder and their relation to maternal stress and de-pression. *Psychiatriki*, 33, 210–218.
- Pakenham, K. I., Samios, C., & Sofronoff, K. (2005). Adjustment in mothers of children with Asperger syndrome: An application of the double ABCX model of family adjustment. *Autism*, 9(2), 191–212.
- Phetrasuwan, S., & Shandor Miles, M. (2009). Parenting stress in mothers of children with autism spectrum disorders. *Journal for specialists in pediatric nursing*, 14(3), 157–165.
- Picardi, A., Gigantesco, A., Tarolla, E., Stoppioni, V., Cerbo, R., Cremonte, M., Alessandri, G., Lega, I. and Nardocci, F.(2018). Parental burden and its correlates in families of children with autism spectrum disorder: a multicentre study with two comparison groups. *Clinical practice and epidemiology in mental health: CP & EMH*, 14, 143.
- Predescu, E., Dobrean, A., Cristina, P. O. P., Miclutia, I., & Sipos, R. (2013). Cognitive coping strategies and emotional distress in mothers of children with autism spectrum disorder. *Applied Medical Informatics*, 32(2), 14–21.
- Qodariah, S., & Puspitasari, N. R. (2016). Correlation between patience and coping strategy of mothers with autistic children. *International Journal of Social Science and Humanity*, 6(12), 919.
- Rasoulpoor, S., Salari, N., Shiani, A., Khaledi-Paveh, B., & Mohammadi, M. (2023). Determining the relationship between over-care burden and coping styles, and resilience in mothers of children with autism spectrum disorder. *Italian Journal of Pediatrics*, 49(1), 53.
- Reupert, A., Deppeler, J. M., & Sharma, U. (2015). Enablers for inclusion: The perspectives of parents of children with autism spectrum disorder. *Australasian Journal of Special Education*, 39(1), 85–96.
- Sanders, J. L., & Morgan, S. B. (1997). Family stress and adjustment as perceived by parents of children with autism or Down syndrome: Implications for intervention. *Child & Family Behavior Therapy*, 19(4), 15–32.
- Selvakumar, N., & Panicker, A. S. (2020). Stress and coping styles in mothers of children with autism spectrum disorder. *Indian Journal of Psychological Medicine*, 42(3), 225–232.
- Seymour, M., Wood, C., Giallo, R., & Jellett, R. (2013). Fatigue, stress and coping in mothers of children with an autism spectrum disorder. *Journal of autism and developmental disorders*, 43, 1547–1554.
- Shukla, R. (2019). Quality of life and coping with stress among mothers of children with autism spectrum disorders. *IAHRW International Journal of Social Sciences Review*, 7(3), 356–362.
- Smith, L. E., Seltzer, M. M., Tager-Flusberg, H., Greenberg, J. S., & Carter, A. S. (2008). A comparative analysis of well-being and coping among mothers of toddlers and mothers of adolescents with ASD. *Journal of autism and developmental disorders*, 38, 876–889.

- Stuart, M., & McGrew, J. H. (2009). Caregiver burden after receiving a diagnosis of an autism spectrum disorder. *Research in autism spectrum disorders*, 3(1), 86–97.
- Su, X., Cai, R. Y., & Uljarević, M. (2018). Predictors of mental health in Chinese parents of children with autism spectrum disorder (ASD). *Journal of Autism and Developmental Disorders*, 48, 1159–1168.
- Subedi, B. P. (2016). Using Likert type data in social science research: Confusion, issues and challenges. *International journal of contemporary applied sciences*, 3(2), 36–49.
- Tunali, B., & Power, T. G. (2002). Coping by redefinition: Cognitive appraisals in mothers of children with autism and children without autism. *Journal of autism and developmental disorders*, 32(1), 25–34.
- Wang, J., Hu, Y., Wang, Y., Qin, X., Xia, W., Sun, C., ... & Wang, J. (2013). Parenting stress in Chinese mothers of children with autism spectrum disorders. *Social psychiatry and psychiatric epidemiology*, 48, 575–582.
- Zablotsky, B., Bradshaw, C. P., & Stuart, E. A. (2013). The association between mental health, stress, and coping supports in mothers of children with autism spectrum disorders. *Journal of autism and developmental disorders*, 43, 1380–1393.
- Zaidman-Zait, A. (2020). The contribution of maternal executive functions and active coping to dyadic affective dynamics: Children with autism spectrum disorder and their mothers. *Autism*, 24(3), 645–657.
- Zeidan, J., Fombonne, E., Scolah, J., Ibrahim, A., Durkin, M.S., Saxena, S., Yusuf, A., Shih, A. and Elsabbagh, M. (2022). Global prevalence of autism: A systematic review update. *Autism Research*.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.