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Impact of Autism Spectrum Disorder on Family Dynamics and Emerging Perspectives on Virtual Autism

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ABSTRACT

Background: Autism spectrum disorder is a neurodevelopmental condition characterized by deficits in social communication and restricted, repetitive behaviors. Beyond its impact on affected individuals, ASD places substantial emotional, social, and economic demands on families, particularly parents. Emerging concerns regarding excessive early digital exposure and autism like behaviours, often termed virtual autism, add further complexity to contemporary caregiver environments. This review synthesized the existing literature on the impact of ASD on family dynamics and explored emerging evidence on virtual autism.

Methods: A narrative review was conducted using a comprehensive search of PubMed, Google Scholar, One Nation One Subscription, and open-access sources. Peer-reviewed qualitative, quantitative, and mixed-methods studies examining the impact of ASD on family dynamics were included, without restrictions on publication year, language, or geographical location. Studies focusing solely on biological or pharmacological aspects of ASD were excluded.

Results: Eighteen qualitative and mixed-methods studies published between 2014 and 2025 were included. Findings revealed that ASD exerts a multidimensional and context-dependent impact on family dynamics, affecting emotional well-being, marital relationships, social participation, occupational roles, and financial stability. Parents, particularly mothers, experienced heightened stress, emotional exhaustion and caregiving burden. Social stigma, financial strain, and role imbalance were prominent across cultural contexts. Despite challenges, families demonstrated adaptive coping strategies and resilience over time. Emerging literature suggests that excessive early screen exposure may contribute to autism-like behaviours, with potential reversibility through early intervention and screen reduction.

Conclusion: Autism spectrum disorder profoundly influences family dynamics, shaped by sociocultural context and support systems. Family-centred care, caregiver support and early guidance on screen use are

essential. Further longitudinal and interventional research is needed to clarify the implications of virtual autism and optimize family-focused interventions.

Keywords: Autism spectrum disorder, Family dynamics, Caregiver burden, Parenting stress, Virtual autism, Screen time

INTRODUCTION

Autism spectrum disorder (ASD) is a complex neurodevelopmental condition characterized by persistent deficits in social communication and interaction, along with restricted and repetitive patterns of behaviour.(1) Globally, ASD affects approximately 1% of the population, with evidence indicating a steady increase in reported prevalence over recent decades.(2–4) Population-based studies from India and South Asia further highlight the growing public health burden of ASD, compounded by underdiagnosis, delayed identification and limited-service availability in low and middle-income settings.(5–7)

Beyond its impact on affected individuals, ASD exerts a profound influence on family dynamics. Parents of children with ASD consistently report elevated levels of stress, anxiety, and reduced quality of life compared with parents of typically developing children or those with other disabilities. Meta-analytic and qualitative evidence demonstrates that caregiving demands, behavioural challenges, financial strain and stigma contribute to disruptions in marital relationships, occupational roles and overall family functioning, with mothers often experiencing disproportionate burden.(8)

While existing systematic reviews and meta-analyses have examined prevalence, age at diagnosis, parenting stress, and parental quality of life, the evidence remains fragmented, with limited synthesis focused explicitly on family dynamics across sociocultural contexts.(2,6) Furthermore, emerging concerns related to excessive early digital exposure and autism like behaviours-often referred to as virtual autism have introduced new environmental considerations that may further shape family routines and caregiving practices.

Given the complexity and contextual nature of these issues, a narrative review is warranted to synthesise diverse evidence and explore both established and emerging perspectives. This review examines the impact of ASD on family dynamics and integrates emerging insights on virtual autism, with relevance for clinical practice, policy development, and future research. To review and synthesize existing literature on the impact of autism spectrum disorder on family dynamics and to explore emerging evidence on virtual autism

METHODS

Study Design

This study is designed as a narrative review, which allows a broader, more flexible exploration of themes and patterns across the literature.

Selection criteria

A thorough, multistep strategy is used in the study selection process to identify and include pertinent research articles. Two researchers independently selected the study. This study included peer-reviewed articles that evaluated the impact of parents of children with autism spectrum disorder. The authors established specific inclusion and exclusion criteria to ensure clarity and consistency throughout the study.

Search strategy

We conducted a comprehensive literature search across multiple electronic databases, including PubMed,

Google Scholar, One Nation One Subscription and open-access articles freely available online. The goal of the search was to identify relevant quantitative and qualitative articles, with no restrictions on publication date or language. Additionally, the authors manually scanned the reference lists of relevant prior studies to identify additional relevant studies. All analyses were based on published studies: no ethical review or patient consent was required.

Inclusion criteria

Published peer-reviewed articles focusing on Autism spectrum disorder and its impact on family dynamics, including parents, caregivers, siblings or the family unit as a whole. Studies addressing psychological, emotional, physical, social, marital or socioeconomic aspects of families of individuals with ASD. Qualitative, Quantitative and mixed-method studies. Articles discussing digital media exposure, screen time or the emerging concept of virtual autism in relation to child development or family functioning. Studies conducted in any geographical setting, including global and Indian contexts. Article published in any language.

Exclusion criteria

Studies focusing solely on biological, genetic, neuroimaging, or pharmacological aspects of ASD without reference to family or caregiving outcomes. Case reports, editorials, opinion pieces, commentaries, conference abstracts and letters to the editor. Articles are limited to clinical interventions targeting only the child, with no discussion of family impact.

Data extraction

To ensure a thorough analysis, data extraction entails methodologically gathering and documenting pertinent information from the included studies. In this study, the authors utilised the Zotero software to integrate the search results and effectively remove duplicate references. The authors, MK and RR, have independently screened the titles and abstracts to exclude studies that did not meet the predefined inclusion criteria. Subsequently, researchers independently extracted the data, and any disagreements encountered during this process were resolved by consensus. The authors extracted the following information from the included studies depicted in Table 1.

RESULTS

This narrative review explored findings from 18 Qualitative and mixed-methods studies published between 2014 and 2025, conducted across diverse cultural and geographical contexts, including India, Pakistan, Turkey, Iran, Tunisia, Ghana, Kenya, Malaysia, Greece, Spain and Brazil, that were selected through a literature search meeting the stated inclusion and exclusion criteria. (Table 1) Most studies focused on the experiences of parents, predominantly mothers of children with autism spectrum disorder (ASD), with sample sizes ranging from small in-depth qualitative samples to larger interview and focus group-based datasets.

Across the reviewed literature, the impact of ASD on family dynamics emerged as complex, evolving and context-dependent, rather than uniform. Several interconnected domains of family life were affected, with the intensity and expression of these impacts varying by sociocultural context, caregiving roles and availability of support systems.

Emotional response and psychological adjustment

An exploratory examination of these studies revealed that parents commonly described a wide spectrum of emotional responses following the diagnosis of ASD. Feelings of shock, denial, grief, guilt, anxiety and sadness were frequently reported, particularly during the early stages of diagnosis.(9–11) Over time, these

emotional reactions often evolved into chronic emotional exhaustion, especially among primary caregivers.(12)

Mothers were consistently identified as experiencing greater psychosocial burden, which was attributed to their central role in daily caregiving and therapy coordination.(13,14) Some studies suggested that emotional distress was not static but fluctuated in response to child-related challenges, social reactions, and future-related uncertainties.(15)

Author, Year of publication	**Country**	**Study Design**	**Study Population and Sample Size**	**Findings Related to Family Dynamics**
Khaliq, 2025	Pakistan	Qualitative (IPA)	Parents of children with ASD (n = 12)	Parents experienced severe psychological distress, stigma, social isolation, occupational disruption, financial strain, sleep disturbances, and physical exhaustion, leading to major disruption in family routines and well-being.
Serrano-Fernández, 2025	Spain	Mixed-methods, non-experimental	Families of children with ASD (n = 33 families)	Families reported unmet needs for information, social and professional support. ASD altered family roles, increased emotional burden, strained marital relationships, and restricted employment opportunities.
Siddiqui, 2024	India	Qualitative (thematic analysis)	Parents of children with ASD (sample size not explicitly stated)	Parents experienced emotional distress, caregiving burden, lack of awareness and resources, social stigma, and disrupted routines, intensified during the COVID-19 pandemic.
Rıfat, 2023	Turkey	Qualitative phenomenological study	Parents of children with ASD (n = 10 families)	Families experienced financial strain, psychological distress, caregiving overload, and marital conflict. Mothers bear disproportionate caregiving responsibilities.
Noori, 2023	India	Qualitative descriptive study	Caregivers of adolescents	Caregivers reported burnout, emotional exhaustion,

			with ASD (n = 12)	behavioural challenges, and discontinuation of rehabilitation services due to financial constraints.
Kapoor, 2022	India	Qualitative (grounded theory)	Parents of children with ASD (n = 10)	Parents reported inadequate awareness, high stress, stigma, marital strain, social isolation, and financial difficulties.
Hosseinpour, 2022	Iran	Qualitative (content analysis)	Parents of children with ASD (n = 18)	Families faced diagnostic challenges, limited services, financial burden, stigma, marital conflict, and chronic stress.
Abid, 2022	Tunisia	Qualitative phenomenological study	Mothers of preschool children with ASD (n = 8)	Mothers experienced denial, depression, emotional distress, marital conflict, and unmet informational and social needs.
Malhi, 2022	India	Qualitative thematic analysis	Parents of newly diagnosed children with ASD (n = 28)	Diagnosis triggered emotional shock, stress, behavioural management difficulties, and marital strain.
Tathgur, 2021	India	Qualitative study	Caregivers of children with ASD (n = 7)	Caregivers experienced anxiety, depression, stigma, lack of services, financial strain, and deterioration in family relationships.
Laili, 2021	Malaysia	Qualitative study	Working parents of children with ASD (n = 3)	Parents faced work–family conflict, lack of workplace awareness, inadequate employer support, and stress.
Papadopoulos, 2021	Greece	Qualitative (IPA)	Mothers of children with ASD (n = 9)	Mothers reported chronic stress, social isolation, financial strain, and marital and sibling relationship difficulties.
Topan, 2019	Turkey	Qualitative study	Parents of children with ASD (n = 20)	Parents experienced shock, grief, stigma, social withdrawal, caregiving burden, and concern about the child's future.

Chu, 2018	Malaysia	Qualitative thematic study	Parents of children with ASD receiving therapy (n = 8)	Parents reported stress, service access difficulties, financial and time burden, marital strain, and social isolation.
Agyekum, 2018	Ghana	Qualitative phenomenological study	Parents and caregivers of children with ASD (n = 10)	Families faced stigma, communication difficulties, financial strain, and caregiving burden; coping relied on faith and social support.
Nuri, 2018	Turkey	Qualitative case study	Parents of children with ASD (n = 23)	Parents experienced sadness, lack of ASD awareness, social stigma, and anxiety regarding the child's future.
Gona, 2016	Kenya	Qualitative interviews & focus groups	Parents of children with ASD (n = 37 interviews + 8 FGDs)	Parents faced stigma, lack of services, financial stress, and social isolation, using both problem- and emotion-focused coping.
Bashir, 2014	India	Qualitative descriptive study	Families of children with ASD (sample size not explicitly stated)	Families experienced high stress, stigma, guilt, financial burden, disruption of family routines, marital strain, and sibling adjustment difficulties.

FOOTNOTE: ASD-autism spectrum disorder; IPA- Interpretative Phenomenological Analysis; FGDs-Focus Group Discussions; n-Sample size

Reconfiguration of Family roles and marital relationships

Several studies explored how ASD prompted a reorganization of family roles, particularly within the parental subsystem. Caregiving responsibilities were frequently concentrated on one parent, most often the mother, leading to role overload and imbalance.(12,13)

Marital relationships were described as both strained and adaptive, depending on contextual and relational factors. Some parents reported increased marital conflict, emotional distancing, and reduced shared time due to caregiving demands and financial stress.(16) Conversely, a few studies suggested that shared caregiving responsibilities and mutual understanding could foster marital solidarity, although this was less consistently reported.(14)

Social withdrawal, stigma and altered family interactions

Across cultural settings, families frequently encountered social stigma and negative societal attitudes towards ASD. parents described experiences of judgement, blame and misunderstanding from extended family members, neighbours and the broader community.(9,17,18)

As an adaptive response, many families reported voluntary social withdrawal, limiting participation in social gatherings and public activities to avoid extended beyond parents to affect siblings and overall family interaction patterns, contributing to reduced social support and increased isolation.(16)

Financial strain and occupational disruptions

An exploratory pattern across studies indicated that financial burden was a persistent stressor for families raising a child with ASD. Costs related to therapy, healthcare, transportation, and education were frequently cited, particularly in low- and middle-income settings.(17,19)

Employment-related challenges were also evident. Several parents, especially mothers, reported reducing work hours or leaving employment entirely to meet caregiving demands.(20) Studies focusing on working parents highlighted work-family conflict, limited workplace awareness, and limited employer support as contributors to caregiver stress, while flexible and supportive work environments appeared to mitigate these challenges.(21)

Caregiver burden and daily life challenges

Caregiver burden emerged as a multifaceted, cumulative experience encompassing physical fatigue, disrupted sleep, emotional exhaustion, and limited personal time.(13) Parents described difficulties managing daily routines, behavioural challenges, sensory sensitivities, and the need for constant supervision.(11)

Studies involving parents of adolescents with ASD highlighted additional concerns related to behavioural management, services discontinuation and uncertainty about long-term care and independence, further intensifying caregiver burden.(19)

Coping strategies, adaptation and resilience

Despite pervasive challenges, families demonstrated a range of adaptive coping strategies. Seeking social support from spouses, extended family, peer groups, and healthcare professionals was commonly reported.(17) Religious and spiritual coping emerged as a particularly salient strategy in several cultural contexts.(13,18)

Acceptance of the diagnosis, increased knowledge about ASD, and gradual skill acquisition in caregiving were described as facilitating psychological adjustment and resilience over time.(11) Participation in parent support groups and therapeutic programs appeared to enhance parental confidence and reduce feelings of isolation.(22)

Contextual influence and emerging considerations

More recent studies have highlighted broader contextual influences, including service availability, public awareness, and environmental disruptions. Pandemic-related changes, such as disrupted routines and reduced access to services, were reported to exacerbate parental stress and caregiving burden.(22)

Although none of the included studies explicitly examined virtual autism, the findings suggest that altered routines, reduced social interaction, and increased environmental demands may shape family dynamics in contemporary contexts, indicating an emerging area for future qualitative exploration.

DISCUSSION

The literature review highlights that autism spectrum disorder exerts a pervasive and multifaceted influence on family dynamics, extending beyond caregiving tasks to affect emotional well-being, marital relationships, social participation, occupational roles and overall family functioning. This synthesis is strongly supported by the meta-analysis conducted by Hayes and Watson, which demonstrated significantly higher levels of parenting stress among parents of children with ASD compared to parents of

typically developing children and those parenting children with other developmental disabilities. Across diverse sociocultural contexts, parents, particularly mothers, consistently reported heightened psychological distress, including stress, anxiety, grief and emotional exhaustion. These emotional responses were often most pronounced following diagnosis but persisted as chronic stress due to ongoing caregiving demands and uncertainty regarding the child's future.(9,11) a pattern also reflected in the sustained stress trajectories described in the meta-analytic literature. A recurring finding across studies was the reorganization of family roles, with caregiving responsibilities disproportionately borne by mothers, contributing to role overload and imbalance within family systems.(12,15) This gendered caregiving burden aligns with findings from the systematic reviews by Vasilopoulou and Nisbet, which identified being a mother as a key factor associated with poorer quality of life among parents of children with ASD.(23)

Marital relationships were variably affected; while several studies reported marital strain, reduced intimacy, and financial and caregiving-related conflict, these could foster resilience and mutual support in some families.(14) This variability underscores the non-uniform nature of family adaptation, a conclusion also emphasised in synthesised evidence indicating that family functioning is shaped by relational resources, coping styles, and contextual supports rather than ASD alone. (23) Social stigma and isolation emerged as a cross-cutting theme across cultural settings. Families frequently reported judgment, misunderstanding, and exclusion from community and extended family networks, leading to social withdrawal and reduced access to informal support systems.(10,17,18) These findings are strongly echoed in the qualitative meta-synthesis by Shorey et al., which highlighted stigma, cultural expectations, and fear of social devaluation as central influences on parental experiences, particularly within collectivistic societies. It is found that social marginalisation appeared to compound emotional distress and caregiver burden, reinforcing a cycle of isolation and stress.(8)

Financial and occupational challenges further shaped family dynamics. Studies consistently reported increased financial strain due to therapy dynamics. Studies consistently report increased financial strain due to therapy costs, healthcare expenses, and reduced employment participation, particularly among mothers who often curtail or abandon paid work to meet caregiving demands.(19,20) These qualitative findings align with evidence from the systematic review by Vasilopoulou and Nisbet, which identified unemployment and economic hardship as significant correlates of poorer parental quality of life. Together, these findings position ASD not only as a clinical condition but also as a socioeconomic stressor with long-term implications for family stability.(23)

Despite these challenges, the reviewed studies also highlighted adaptive coping and resilience. Parents employed a range of coping strategies, including seeking social and professional support, engaging in religious or spiritual practices, acquiring knowledge about ASD, and reframing caregiving experiences with meaning and acceptance.(13,21) These adaptive processes are consistent with the meta-synthesis by Shorey et al., which described parental adjustment as a dynamic journey involving acceptance, meaning-making, and culturally shaped coping strategies rather than a fixed state of distress.(8) Collectively, these findings suggest that family dynamics in ASD are not solely characterised by burden, but also by evolving processes of adaptation and resilience over time.

Emerging Perspective on Virtual Autism

The term virtual autism has been increasingly used in recent literature to describe autism like behaviour manifestations associated with excessive early exposure to digital screens, particularly during the critical neurodevelopmental period of infancy and toddlerhood. Although virtual autism is not recognised as a

distinct diagnostic category, several authors have highlighted consistent behavioural patterns that resemble core features of autism spectrum disorder, including delayed speech, reduced eye contact, impaired social interaction, limited joint attention, and repetitive behaviour .(24–26)

Empirical evidence indicates a significant association between early and prolonged screen exposure and the emergence of autism-like symptoms. Hermawati et al. (2018) reported that children exposed to electronic screens for >3 hours per day before the age of two exhibited language delay, short attention span, and hyperactivity, with limited parent-child interaction observed in the majority of cases.(25) Similarly, Al Moussawi et al., (2024) identified excessive screen exposure among children aged 0-3 years as significantly associated with increased autism-related behavioural scores, suggesting early digital exposure as a potential environmental risk factor.(27)

Several authors have proposed neurobiological mechanisms linking screen overuse to autism like behaviours. (Rehan et al., 2023 and Jiang and Liu, 2015) suggested that prolonged digital exposure may contribute to behavioural dysregulation and social withdrawal observed in screen-exposed children.(26,28)

A key distinction emphasised in the literature is the potential reversibility of symptoms. Harle 2019 documented clinical cases in which children presenting with ASD-like symptoms showed marked improvement or resolution following screen withdrawal and enhanced caregiver-child interaction, supporting the hypothesis that these behaviours may be environmentally mediated rather than neurodevelopmentally fixed.(24) Harle (2019) and Detroja and Bhatia (2024) similarly highlighted early intervention through screen reduction and stimulation as a critical protective strategy (Chakraborty, 2025).(24,29,30)

Professional guidance reinforces these concerns. The Canadian Paediatric Society 2017 recommended minimising screen exposure in children under five years of age and prioritising responsive, face-to-face interactions to promote healthy cognitive and social development 2017.

More recent perspectives, such as Kaushik 2024 and Chakraborty 2025, caution against misdiagnosis while advocating for balanced digital habits, parental supervision, and early developmental screening to differentiate ASD from screen-related developmental delays.(29,31)

In summary, emerging evidence suggests that virtual autism reflects a context-dependent phenomenon arising from excessive early digital exposure and altered caregiving environments.(24,27) While it should not replace established diagnostic frameworks for ASD, it provides an important lens for understanding environmentally induced autism like behaviours, their reversibility and their implications for family dynamics. Further longitudinal and interventional research is required to clarify causality, developmental trajectories, and long-term outcomes.

Recommended Screen use and Preventive measures

- Between 2-3 years: Limit screen time to 1 hour/day only in the presence of adults who explain the content to the child.(32,33)
- Between 3-6 years: Limit screen time to a maximum of one hour/day, using high-quality content.(32,33)
- Select age-appropriate content.(33,34)
- Promote physical activity and outdoor play(32)
- Encouraging in-person relationships.(34,35)
- Teach digital literacy.(33)

- For parents: Avoid exposure to screen-based devices for children below 24 months; turn off devices when not in use, especially in children's rooms; ensure parental supervision and guidance.(32,34)
- For medical professionals: Inform parents about the risks of screen exposure below 3 years and advise on recommended limits and alternative activities.(32,33,36)

Limitations of the study

As a narrative review, this study lacks the methodological rigor of systematic reviews, including formal quality appraisal and quantitative synthesis, which may introduce selection bias and variability in the strength of the evidence. The review primarily included peer-reviewed and open-access publications, potentially excluding relevant grey literature. Most included studies were qualitative or mixed-methods, with a predominant focus on mothers, limiting the representation of fathers, siblings, and extended family members. Additionally, cultural heterogeneity across study settings may affect the generalizability of findings. The concept of virtual autism remains emerging and inconsistently defined, with limited empirical evidence and no direct exploration in the included studies, warranting cautious interpretation of related findings.

Implications in Clinical Practice

The findings highlight the need for family-centred, multidisciplinary care in the management of ASD. Routine screening for caregiver stress and psychological distress should be integrated into clinical practice. Psychoeducation, counselling and parent support interventions may enhance coping and resilience. Clinicians should address social stigma and advocate for improved access to services. Early developmental guidance on appropriate screen use is essential to prevent misdiagnosis and mitigate screen-related development delays. Nurses and primary healthcare providers play a pivotal role in early identification, parental education and ongoing family support, particularly in resource-limited settings

CONCLUSION

Autism spectrum disorder profoundly influences family dynamics, affecting emotional well-being, marital relationships, social participation, occupational roles and financial stability. These impacts are shaped by sociocultural context, caregiving roles and support systems. Despite significant challenges, families demonstrate adaptive coping and resilience over time. Emerging evidence on virtual autism underscores the potential role of excessive early screen exposure in autism-like behaviours, highlighting the importance of preventive guidance and early intervention. Holistic, family-centered approaches and further longitudinal research are essential to improve outcomes for children with ASD and their families.

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