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# Clinical Interventions for Depression and Anxiety in Mothers of Children with Autism Spectrum Disorder in China

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**Abstract**

Mothers of children with autism spectrum disorder (ASD) in China often experience elevated levels of depression and anxiety, which can adversely affect both the mothers' well-being and their children's developmental outcomes. This review addresses the urgent need to support these mothers by examining current clinical intervention strategies for maternal depression and anxiety in the context of raising a child with ASD in China. We conducted a comprehensive literature search (2022－2025) of international and Chinese studies, including randomized trials, meta-analyses, and program evaluations, to identify effective interventions and emerging practices. The findings reveal that a range of interventions can substantially alleviate maternal psychological distress. Psychotherapeutic approaches ― particularly cognitive-behavioral therapy (CBT) and mindfulness-based programs ― consistently reduce parental stress and, when appropriately targeted, depressive symptoms. Behavioral and skills-training programs (such as parent-mediated ASD interventions) not only improve child behavior but also indirectly reduce mothers' stress by empowering them with effective parenting techniques. Family support and psychoeducational interventions (including peer support groups and parenting workshops) help combat isolation and increase coping self-efficacy, leading to improvements in mood and anxiety. Pharmacological treatment (e.g., SSRIs for depression/anxiety) remains an important option for moderate-to-severe cases, and early evidence suggests that integrating mental health services into pediatric ASD care (through technology and multidisciplinary teams) can improve access and outcomes. In conclusion, addressing the mental health of mothers caring for children with ASD is a public health priority in China. Multiple evidence-based interventions―when tailored to cultural norms and delivered in accessible formats―can significantly reduce maternal depression and anxiety. Such improvements benefit not only the mothers, but also their children's progress and the overall wellness of ASD families.

**Keywords:** Autism Spectrum Disorder; Maternal Mental Health; Depression; Anxiety; Caregiver Intervention; Parenting Stress;Psychosocial Support

## 1. Introduction

Mothers of children with autism spectrum disorder (ASD) in China face a substantial burden of mental health challenges. Research indicates that parents—especially mothers—of autistic children experience significantly higher rates of depression and anxiety than those of neurotypical children. Globally, the prevalence of depressive symptoms among caregivers of children with ASD is approximately 45% (Lam et al., 2025). In the Chinese context, several studies report even higher rates. For example, regional studies have found that about 40–50% of Chinese mothers of children with ASD have clinically significant depression or anxiety (Lin et al., 2023; Li et al., 2023). One survey in Guangzhou reported that 38.8% of such mothers had depression and 37.5% had anxiety symptoms (Lin et al., 2023), while another study noted 56.6% of caregivers with depression (Li et al., 2023) – a striking public health concern. An earlier study in Changsha even found depressive symptoms in 72.5% of mothers (Zhou et al., 2019), illustrating the extreme end of the spectrum. These elevated rates of maternal mental health problems carry serious implications: maternal depression and anxiety can impair daily functioning, diminish quality of life, and potentially influence the course of the child's autism intervention outcomes. Mothers with stable, positive moods are better able to support their ASD children's development, whereas unmanaged maternal distress may exacerbate family dysfunction and hinder the child's progress. Given China's large population (autism prevalence ~1%, equating to millions of affected families), addressing maternal depression and anxiety in this context is a public health priority.

Several sociocultural factors in China further complicate this issue. Traditional caregiving norms often place the bulk of child-rearing and therapy responsibilities on mothers, frequently to the detriment of their careers and well-being. A recent nationwide survey by Zhao et al. (2024) found that only about 37% of mothers of children with ASD remained employed, compared to 97% of fathers. In that study, 54.3% of mothers had quit their jobs to provide full-time care for their autistic child, whereas only 2.8% of fathers left employment (Zhao et al., 2024). This gendered imbalance contributes to financial strain, social isolation, and chronic stress for mothers. Additionally, societal stigma surrounding both autism and mental illness remains prevalent in Chinese culture. Many mothers internalize a "courtesy stigma" – feeling shame or blame due to their child's condition – which erodes self-esteem and intensifies symptoms of depression and anxiety. Perceived discrimination has been shown to negatively affect Chinese parents' well-being, partially mediating the relationship between social support and mental health (Ban et al., 2021). In short, Chinese mothers of children with ASD often face a convergence of risk factors: intensive caregiving demands, limited external support, stigma-related stress, and reduced economic and social opportunities. These factors underscore the need for targeted clinical interventions to support maternal mental health in this population.

Study Rationale: This review examines current clinical intervention strategies for treating depression and anxiety in mothers of children with ASD in China. We combine a focused literature review of recent studies (primarily 2022–2025) with insights from empirical evidence to evaluate which interventions are effective or promising in the Chinese context. Major approaches addressed include pharmacological treatments, psychotherapy (e.g., cognitive-behavioral therapy), behavioral and skills-training programs, family support and psychoeducational interventions, and

integrated health services. By synthesizing findings from recent clinical trials, meta-analyses, and program evaluations, we aim to (1) define the scope of maternal depression and anxiety in China's ASD community and its public health significance, (2) compare the effectiveness and limitations of different intervention types within Chinese healthcare and family settings, and (3) provide evidence-based recommendations for practitioners and policymakers to improve support for these mothers. Improving maternal mental health is not only vital for the mothers themselves, but also yields benefits for their children with ASD and the family unit as a whole. Developing effective interventions in this arena can have far-reaching positive impacts, aligning with broader public health goals in China.

While the challenges of parental mental health in autism families have been recognized for decades through foundational studies, our focus on recent literature is deliberate. Early efforts demonstrated that even basic interventions could help mothers cope (for example, a brief psychoeducational program via WhatsApp significantly reduced depressive symptoms), laying important groundwork. Building on that foundation, we concentrate on research from 2022 onward to capture the latest advances, such as technology-assisted interventions and post-pandemic innovations, which reflect the current realities of service delivery in China.

This review's significance is both theoretical and practical. Theoretically, it integrates global insights with China's unique sociocultural context, extending prior caregiver stress and coping research to the ASD population and highlighting how cultural factors modulate intervention effectiveness. Practically, by translating up-to-date evidence into concrete recommendations, the review provides timely guidance for healthcare providers and policymakers. In doing so, we aim to bridge the gap between research and practice – ensuring that the knowledge gained from studies directly informs the development of tailored support programs that can improve outcomes for mothers and their children.

## 2. Literature Review

### 2.1. Scope of Recent Research (2022–2025)

In the past three years, there has been growing scholarly attention to interventions aimed at alleviating parental stress, depression, and anxiety in families of children with ASD. *(It is worth noting that the need to support these parents was documented in earlier research as well, but recent studies have accelerated in number and depth.)* Multiple systematic reviews and meta-analyses have synthesized the evidence on parent-focused mental health interventions. For instance, Kulasinghe et al. (2023) conducted a meta-analysis of 32 randomized controlled trials (RCTs) of psychological interventions delivered to mothers of young children with ASD. Their review found moderate-certainty evidence that such interventions – especially those focused on improving the parent–child relationship – significantly reduce parenting stress (pooled Cohen's d in the range of ~0.4–1.1 for stress reduction across trials). However, effects on maternal depressive symptoms were less consistent; interventions that did not directly target parental mental health showed no significant post-treatment impact on depression. This suggests that while many parent training programs effectively lower stress, additional therapeutic components (e.g.

dedicated mental health counseling) may be needed to specifically ameliorate maternal depression. Another comprehensive review by Mo et al. (2024) used a network meta-analysis (69 studies, N≈4,213 parents) to compare various mental health interventions for parents of autistic children. Notably, this analysis concluded that mindfulness-based interventions yielded the largest improvements in parenting stress, whereas cognitive-behavioral therapy (CBT) was most effective for reducing parent depression and anxiety. Psychoeducational programs (such as parent training workshops and autism education courses) also produced significant reductions in parent anxiety, depression, and stress. Additionally, acceptance and commitment therapy (ACT) showed promise in lowering depressive symptoms. These high-level findings underscore that a range of intervention modalities have been tested recently, with some differential benefits: mindfulness-based approaches (including ACT) address stress and mood through acceptance and coping strategies, whereas CBT and psychoeducation more directly target maladaptive thoughts, skills, and knowledge to reduce distress.

In China specifically, recent studies reflect a mix of global evidence-based practices and culturally adapted approaches. A search of both Chinese and international literature (2022–2025) reveals several RCTs conducted in mainland China focusing on maternal mental health in ASD families. Many of these interventions leverage technology or group formats to increase accessibility. For example, Liu et al. (2021) pioneered a WeChat-based parent training program during the COVID-19 pandemic, finding it feasible and effective in reducing Chinese mothers' depression and anxiety levels. Building on this, Lin et al. (2025) tested a 12-week WeChat-facilitated parent–child creative art therapy (PCCAT) program in Guangdong. Their pilot RCT showed that mothers who engaged in guided collaborative art-making sessions (delivered via social media and supplemented with online home visits) experienced significantly greater reductions in anxiety and depression compared to a control group, along with improved parent–child relationships. Similarly, another trial in China by Liu et al. (2023) evaluated parent–child sandplay therapy for preschool-aged children with ASD and their mothers. The results indicated that the sandplay intervention led to decreases in parenting stress and improvements in the children's social interaction and sleep quality. These studies highlight a growing trend in China toward integrated family interventions – combining child-focused therapeutic activities with simultaneous psychosocial support for parents. This dual-benefit approach is appealing: mothers derive emotional relief and parenting skills, while children potentially gain developmental improvements.

Beyond such innovative programs, Chinese researchers have also examined more traditional intervention categories in this context. Pharmacological treatment of maternal mood disorders is one area with limited direct research specific to ASD caregiving; yet standard clinical practice (in China and globally) often involves medication for mothers with moderate-to-severe depression or anxiety. Current psychiatric guidelines, including those in China, endorse selective serotonin reuptake inhibitors (SSRIs) as a first-line pharmacotherapy for major depressive disorder and generalized anxiety disorder. While no recent trials specifically target mothers of autistic children with medication alone, it is generally accepted that mothers who screen positive for significant depression or anxiety should be evaluated and offered evidence-based treatment, which may

include antidepressants or anxiolytics when appropriate. Recent Chinese public health initiatives underscore this point: since 2020, national guidelines have promoted routine mental health screening for new mothers (initially in the perinatal period) and timely referral for treatment, integrating maternal mental health care into existing services (Shen et al., 2022). By analogy, mothers of children with special needs like ASD could similarly benefit from integrated care models where mental health professionals collaborate with pediatric and rehabilitation teams.

In summary, the recent literature provides a multi-faceted view of how to support mothers of children with ASD. There is strong evidence from 2022–2025 that psychosocial interventions – including CBT, mindfulness-based programs, ACT, and psychoeducation – can reduce parenting stress and, to a lesser extent, depressive symptoms in these mothers. Trials from China highlight culturally tailored, often group-based or tech-assisted interventions (such as WeChat-delivered therapy) that show high acceptability and promising efficacy in improving maternal well-being. At the same time, pharmacological treatment remains an important tool for mothers with more severe clinical depression or anxiety, even if research specific to the ASD caregiving context is sparse. Taken together, these findings set the stage for a closer analysis of each major intervention strategy, their demonstrated effectiveness in Chinese settings, and the practical considerations involved in implementation.

### 2.2. Inclusion Criteria for Reviewed Studies

For this narrative review, we focused on publications from 2022 onward to capture the latest evidence. This timeframe was chosen to ensure relevance to current practice, as the past few years have seen significant developments (e.g., greater use of telehealth and new policies) in this field. We included studies that specifically examined interventions for depression, anxiety, or psychological distress in parents (particularly mothers) of children with ASD. Priority was given to clinical trials, systematic reviews, and meta-analyses. We also incorporated high-quality observational studies from China that provided relevant data on prevalence or risk factors to contextualize the need for interventions. Key inclusion criteria were: (a) studies involving mothers (or primary female caregivers) of children with ASD; (b) evaluation of a defined intervention (pharmacological, psychological, behavioral, social support, or integrated care approach) with outcomes on the mother's mental health (depression, anxiety, stress, well-being); or (c) in the case of reviews, a synthesis of intervention effects for this population. Both international English-language and Chinese-language sources were examined; however, most included studies were published in English-language medical or psychology journals, given the wider dissemination of those findings. In total, over 25 relevant sources met these criteria and are referenced in this article. Notably, many of these studies are based on Chinese samples or authored by Chinese researchers, ensuring that our insights are grounded in China's sociocultural and healthcare context.

We note that some empirical studies (especially recent RCTs) had relatively small sample sizes (e.g. pilot trials with N ~60–120 families), which is important to keep in mind when interpreting results. Nonetheless, by reviewing a broad set of studies – including large meta-analyses with thousands of participants – we aim to balance levels of evidence. No new human subjects research was conducted by the authors for this article; therefore, Institutional Review Board

approval was not applicable. Instead, this review synthesizes published data under guidelines of the PRISMA statement for scoping reviews, ensuring that study selection and interpretation were conducted systematically and without overt bias.

## 3. Methodology

**(1) Literature Search:** We performed a structured search of electronic databases (including PubMed, Web of Science, Scopus, and the Chinese database CNKI) for the period January 2022 through July 2025. Search terms combined keywords related to autism (e.g., "autism," "ASD") with terms related to parents or mothers, and mental health terms ("depression," "anxiety," "stress," "psychological distress"), as well as intervention terms ("intervention," "treatment," "therapy"). We also manually scanned the reference lists of key articles (snowballing) and recent issues of relevant journals (e.g., *Autism*; *Journal of Autism and Developmental Disorders*; *Child Psychiatry & Human Development*; *International Journal of Environmental Research and Public Health*) to identify additional pertinent studies. Particular attention was given to studies originating from China or addressing Chinese populations, to align with the focus on the Chinese context.

**(2) Inclusion and Exclusion Criteria:** As outlined in the Literature Review, our inclusion criteria encompassed studies evaluating clinical interventions for maternal depression and/or anxiety in the ASD caregiving context, as well as comprehensive reviews thereof. We included randomized trials, quasi-experimental studies, and relevant systematic reviews or meta-analyses. We also included select qualitative studies if they offered insight into intervention needs or cultural factors (for example, a qualitative study on Chinese mothers' coping strategies might be used to contextualize gaps in support services). Studies were excluded if they focused solely on child outcomes without assessing parent mental health, or if the parent population was not specific to ASD caregiving. We also excluded studies on perinatal depression/anxiety unless they explicitly linked findings to having a child with ASD (this was rare, since an ASD diagnosis usually occurs later in the child's development). However, we drew on some perinatal mental health policy literature for analogies in integrated care models (as noted in the literature review above).

**(3) Data Extraction:** From each included source, we extracted information on the intervention type, sample characteristics (including sample size, location, and child's ASD severity if reported), outcome measures for maternal mental health, and key findings regarding intervention effectiveness. For quantitative results, we recorded effect sizes or percentage improvements when available. For example, from Mo et al. (2024) we noted the ranked efficacy of different therapies on parental anxiety and depression; from Chinese trials like Lin et al. (2025) we captured pre- versus post-intervention differences in standardized anxiety/depression scale scores between intervention and control groups. We also collected any reported barriers, limitations, or cultural adaptations mentioned for each intervention (e.g., whether materials were translated or examples made culturally relevant).

**(4) Quality Appraisal:** While a formal risk-of-bias assessment for each study was beyond the scope of this narrative review, we qualitatively considered study quality in our analysis. Greater weight was given to findings from randomized controlled trials and meta-analyses with rigorous methods. When interpreting results, we account for study limitations (for instance, the lack of a control group in some parent support group studies, or the small pilot nature of certain trials). This approach helps ensure that our conclusions are proportionate to the strength of evidence available, highlighting well-supported findings while noting where evidence is preliminary.

**(5) Empirical Data Considered:** No new empirical data were generated by us for this review. However, we did incorporate some publicly available statistics or government reports when pertinent to background and context. For instance, in the introduction we cite prevalence figures (e.g., around 45% global caregiver depression prevalence, and specific Chinese studies reporting 38–56% prevalence) to illustrate the magnitude of the problem; all such data are attributed to their original sources. Likewise, policy statements (such as China's national guidelines for maternal mental health screening) are referenced accordingly. This synthesis adheres to academic standards for narrative reviews, aiming to provide a comprehensive and unbiased overview of clinical interventions for this important topic.

## 4. Results and Analysis

We organize our discussion of intervention strategies into five major categories: (4.1) Pharmacological Treatments, (4.2) Psychotherapy, (4.3) Behavioral and Skills-Training Programs, (4.4) Family Support and Psychoeducational Interventions, and (4.5) Integrated and Technological Health Services. For each category, we summarize the evidence on effectiveness (with emphasis on recent studies and Chinese contexts), note any limitations or cultural considerations, and discuss how these interventions fit into Chinese healthcare and family settings.

### 4.1. Pharmacological Treatments

Pharmacotherapy is a cornerstone of treatment for clinical depression and anxiety in the general adult population, and this extends to mothers in the ASD caregiving context when symptoms are moderate to severe. The most commonly recommended medications are antidepressants – particularly SSRIs such as sertraline, fluoxetine, or escitalopram – for depression and chronic anxiety, and occasionally short-term anxiolytics (e.g., benzodiazepines) for acute severe anxiety or insomnia. While we found no recent clinical trial that evaluates an antidepressant specifically in mothers of children with ASD, there is abundant evidence from the broader psychiatric literature that SSRIs are effective for treating major depression and generalized anxiety in adults (Jin et al., 2023). It is generally assumed that mothers of children with ASD will respond to these medications similarly to other patients with depression or anxiety. Clinical practice in China aligns with international guidelines: surveys of psychiatric practice confirm that SSRIs are the first-line pharmacotherapy for depression in China, consistent with global recommendations (Jin et al., 2023). For mothers experiencing significant depressive or anxiety symptoms, pharmacological treatment can significantly reduce symptom severity and improve overall functioning – which in turn may help them better cope with the daily challenges of caregiving.

That said, several important considerations apply when treating this population with medication. First, some mothers of young ASD children may be postpartum or breastfeeding, which raises questions about medication safety. Recent advances in medications specifically for postpartum depression (e.g., the approval of zuranolone) reflect growing attention to maternal mental health pharmacology. In routine practice, Chinese physicians must weigh risks versus benefits when prescribing SSRIs to breastfeeding mothers, often opting for those antidepressants with lower excretion into breast milk (for example, sertraline or paroxetine, which result in minimal infant drug exposurefrontiersin.org). For mothers of older children, this is less of an issue, but it remains important to monitor any side effects that could interfere with childcare (such as fatigue or sleep disturbances from medication). Second, stigma and health beliefs in China can affect acceptance of psychiatric medication. Qualitative accounts suggest some Chinese mothers prefer to "endure" emotional suffering rather than seek medication, due to fears of side effects or the perception that taking psychiatric drugs is a personal failure – which can lead some mothers to avoid or prematurely discontinue needed treatment. Part of any intervention may therefore involve psychoeducation to de-stigmatize the use of medication and emphasize that treating a mother's depression is as legitimate and necessary as treating any physical illness. Additionally, ensuring regular follow-up and support for adherence is crucial so that those who begin medication continue it for a sufficient duration to achieve full benefits.

Integration of pharmacological care into autism services is another consideration. Currently, there have been no medication trials targeted specifically at this group, likely because standard practice assumes similar efficacy as in the general population. However, in cases where a mother's symptoms are severe or not responding to psychosocial approaches, combining medication with therapy is considered best practice. For example, a mother with major depression might benefit from starting an SSRI to alleviate core symptoms, enabling her to participate more effectively in psychotherapy or parent training programs. In China's ASD service landscape, formal integration of psychiatric support for parents is not yet standard, but some hospitals are moving in that direction. An editorial by Sun et al. (2024) noted that pediatricians in China are being encouraged to screen new mothers for postpartum depression and facilitate referrals as part of routine pediatric care. By extension, pediatric rehabilitation centers for autism could adopt a similar approach – having on-site mental health professionals available to evaluate and treat mothers who show signs of depression or anxiety. This kind of integrated service model is still nascent (see Section 4.5 on Integrated Services), but it represents a promising avenue to ensure mothers who require pharmacological treatment receive it in a timely and coordinated manner.

In summary, pharmacological intervention (especially with SSRIs) is a crucial tool for managing maternal depression and anxiety in the ASD context. Such medications, when appropriately prescribed and monitored, are effective in reducing symptoms and can be safely used in most mothers. The main limitations include potential side effects, issues with medication adherence, and the need to overcome stigma about "taking psychiatric drugs." In China, addressing these barriers through education and integrating medication management into broader family support could improve uptake. Medication is often most beneficial when used in

combination with psychosocial interventions, providing a comprehensive treatment approach for mothers who are struggling.

### 4.2. Psychotherapy

Psychotherapy for mothers of children with ASD has shown significant benefits, particularly cognitive-behavioral therapy (CBT) and related modalities focusing on stress reduction and coping skills. CBT is a structured, time-limited therapy that helps individuals challenge negative thought patterns and develop more adaptive behaviors. Across multiple studies, CBT has emerged as one of the most effective treatments for improving parental mental health. The network meta-analysis by Mo et al. (2024) identified CBT as highly effective in alleviating both anxiety and depression in parents of autistic children, echoing decades of evidence that CBT can reduce general adult depression and anxiety. This suggests the approach translates well to the caregiving context when appropriately adapted.

In practice, CBT interventions for these mothers often involve elements of stress management, problem-solving training, and cognitive reframing. For example, a therapist might help a mother learn to reframe maladaptive cognitions like "My child's autism is my fault" or catastrophic worries about the future, replacing them with more balanced, constructive thoughts. Behavioral techniques are also employed: mothers may be guided to schedule pleasant activities for themselves (to combat anhedonia and burnout) or practice gradual exposure to anxiety-provoking situations (for instance, taking their child into public settings despite fear of judgment). Typically, CBT is delivered through weekly sessions over a set period (often 8–12 weeks), either one-on-one or in a small group format, with therapists assigning homework exercises so that mothers can practice skills between sessions. A recent trial in Hong Kong by Ni et al. (2025) tested an ACT-based group parenting program (a form of therapy related to CBT that emphasizes mindfulness and value-driven action). This pilot RCT reported reductions in parenting stress and trends toward improved mood among participating mothers. While full results are pending publication, the study underscores growing interest in adapted CBT/ACT approaches in Chinese cultural settings.

Mindfulness-based interventions (MBIs) deserve special mention as a subset of psychotherapy. MBIs, such as Mindfulness-Based Stress Reduction (MBSR), teach meditation and present-focused coping skills. Parents of children with ASD often face ongoing, unpredictable challenges that can fuel chronic stress. Mindfulness practice helps by increasing psychological flexibility and resilience. Feng et al. (2025) found that among parents of autistic children in China, those with higher trait mindfulness reported lower parenting stress, and this relationship was mediated by enhanced resilience and psychological flexibility. In other words, mindfulness may bolster a mother's inner resources to handle stress without being overwhelmed. Several trials globally have shown that MBSR or other mindfulness programs significantly reduce stress in parents of children with developmental disabilities. Anecdotally, Chinese participants have responded well to mindfulness training, possibly because it resonates with Eastern contemplative traditions (meditative practices have roots in Asian cultures). However, formal MBI programs are still gaining traction in China's healthcare system; they are more often found in major urban mental health centers or as online courses. Notably, mindfulness might also buffer the negative psychological impact of stigma: Chan and Lam (2020) observed that higher mindfulness

attenuated the link between perceived stigma and distress in parents of children with ASD. This suggests that mindfulness-based therapy could indirectly help mothers cope with societal stigma in addition to managing stress. In practice, structured mindfulness programs are typically delivered as brief courses (for example, the standard MBSR program consists of 8 weekly group sessions, often 2 hours each) where mothers learn techniques such as focused breathing, body scans, and mindful movement, with daily at-home exercises to cultivate present-moment awareness.

Other therapeutic modalities have been explored as well. These include interpersonal psychotherapy (IPT), which focuses on relationship issues and building social support, and psychodynamic therapy, which can help address deeper feelings of grief, guilt, or changes in identity associated with parenting a child with special needs. There is little specific literature on IPT or psychodynamic therapy for this population in recent years, likely because CBT, ACT, and mindfulness-based approaches have dominated research due to their ease of manualization and outcome measurement. Nonetheless, clinical experience suggests that some mothers benefit from supportive counseling that allows them to process complex emotions (grief, anger, frustration) about their child's diagnosis and the resulting life changes. Culturally, Chinese mothers might not readily seek therapy due to stigma or the desire to appear "strong," but when they do engage, establishing trust and a nonjudgmental space is key. Chinese therapists report that mothers often initially present with somatic complaints (fatigue, headaches, insomnia) which can mask underlying depression or anxiety; thus, psychoeducation is needed to help mothers recognize the connection between physical symptoms and emotional stress and to engage them in therapy.

One practical challenge for psychotherapy in China is access: there are relatively fewer trained clinical psychologists per capita, especially outside major cities. As a result, alternative formats such as group therapy or psychoeducational group workshops are commonly used, sometimes led by psychiatric nurses or social workers under supervision. Group CBT programs for parents can normalize their experiences and provide peer support in addition to teaching coping techniques. For instance, Sharma et al. (2022) in India ran parent support groups that included basic stress management training; even without individual therapy, participants showed significant reductions in anxiety and stress. Although that study was in a different country, its success is likely relevant to similar collectivist cultures like China, where sharing experiences in a group can reduce feelings of isolation and shame.

In summary, psychotherapy – particularly CBT and mindfulness/acceptance-based therapies – plays a vital role in treating maternal depression and anxiety in the context of ASD. These therapies help mothers develop coping skills, reframe negative thoughts, and practice emotional regulation techniques. The result is not only reduced psychological distress but often improved parenting efficacy and satisfaction. Limitations of psychotherapy include the need for trained providers and the time commitment required from mothers, who may have difficulty attending sessions due to childcare or work constraints. Stigma and lack of mental health awareness can also hinder engagement. Encouragingly, emerging digital solutions (e.g., guided self-help apps, teletherapy services) are beginning to break down some of these barriers by making therapy more accessible at home (Kelson & Dorstyn, 2023). Overall, the evidence strongly supports

psychotherapy as a frontline intervention – either as a standalone or in combination with other strategies – to promote the mental well-being of mothers raising children with ASD.

### 4.3. Behavioral and Skills-Training Programs

Behavioral interventions in this context usually refer to programs that teach parents strategies to manage their child's behavior and improve parent–child interactions, which in turn can reduce parental stress and anxiety. Two closely related concepts are parent skills training (for the child's benefit) and behavioral activation (activities to improve the mother's own mood).

**Parent-Mediated Intervention Training:** In China, as in many countries, parent training programs for ASD—often based on principles of applied behavior analysis (ABA) or developmental behavioral techniques—have become widespread. These programs primarily aim to improve the child's skills (communication, social behavior, daily living) by training parents as co-therapists. However, an important secondary outcome is often the parent's own mental health. When parents feel more competent in handling challenging behaviors and can see improvements in their child, their stress and anxiety levels tend to decrease. A 2024 meta-analysis (as referenced in Mo et al., 2024) confirmed that parent-mediated ASD interventions yield modest but significant improvements in parent outcomes, such as reduced parenting stress and improved self-efficacy. In China, a longstanding parent training model is the Structured Rehabilitation and Education of Autistic Children (SREAC) program, which has reached thousands of families since the 1990s. While SREAC is an older program, it and its successors (often delivered in group class formats at child rehabilitation centers) report that parents not only learn behavioral techniques but also feel emotionally supported through the training process (based on program evaluation reports). This suggests that even when an intervention's focus is on the child, the act of parent training itself—working with professionals and other parents, gaining knowledge and mastery—can provide psychological benefits to the mother.

One innovative example of behaviorally oriented training is a WeChat-based parenting training (WBPT) program tested during COVID-19 in Fujian province. This 12-week quasi-experimental study delivered weekly lessons on behavior management and communication skills via a smartphone app, along with interactive homework and group chat support. Mothers in the WBPT group showed significant reductions in standardized anxiety and depression scores compared to a waitlist control (Liu et al., 2021). Notably, over 90% of participating mothers reported being "extremely satisfied" with the convenience and usefulness of the training. This highlights how parent training, even when delivered remotely, can empower mothers and alleviate psychological distress. By gaining skills to manage meltdowns or teach their child everyday skills, mothers likely experience a greater sense of control and optimism, which buffers against feelings of helplessness and depression.

**Behavioral Activation for Mothers:** Apart from child-focused training, another approach rooted in behavioral therapy is encouraging mothers to increase engagement in rewarding or meaningful activities for themselves – a strategy known as behavioral activation. Depression often leads to withdrawal and loss of interest in activities, so therapists may work with a mother to deliberately schedule small enjoyable or self-care activities (e.g. taking a short walk, practicing

a hobby, meeting a friend for coffee) and gradually build up positive experiences in her life. There is no specific study on a standalone behavioral activation program for Chinese ASD mothers, but behavioral activation is commonly integrated into broader CBT protocols. Qualitatively, many Chinese mothers devote almost all their time and energy to their child's needs, neglecting their own well-being. Teaching them that carving out even 30 minutes a day for a pleasant activity is not selfish but actually therapeutic can be a revelation – one that often improves mood and reduces burnout.

**Managing Child Behavior to Reduce Parent Distress:** It is well-documented that the severity of a child's autism symptoms and behavior problems correlates with parental stress and depression levels (Zhou et al., 2019; Du et al., 2024). Thus, interventions that successfully reduce the child's disruptive behaviors or improve their adaptive functioning have an indirect benefit on the mother's mental health. For example, if a parent training program leads to better child compliance or communication, the mother is likely to encounter fewer daily frustrations and more positive interactions, which can alleviate her anxiety and stress. This "virtuous cycle" means some interventions primarily targeting the child yield important secondary effects on maternal well-being. An illustration is a combined therapy program studied by He et al. (2024): a mixed-methods RCT in which adding a parent–child music therapy component (Mozart–Orff-based) to standard ABA not only improved the children's social engagement but also significantly reduced maternal stress and improved overall family functioning. The structured music-and-movement activities enhanced parent–child bonding and enjoyment, demonstrating how creative behavioral interventions can reduce tension and build emotional connection within the family.

**Limitations of Behavioral Programs:** While clearly beneficial, behavioral and skills-training programs require time and effort from already busy mothers. Attrition can be a challenge if a program is too demanding or if immediate child improvements are not evident (which may lead to discouragement). Culturally, Chinese families highly value education and skill-building, so parent training often aligns well with their values—parents are willing to invest effort for the child's sake. However, the focus on the child can sometimes overshadow the mother's own mental health needs; facilitators should ensure that sessions also check in on the parents' emotional well-being, not only on the child's "homework." Another limitation is that some behavioral strategies may not easily generalize to families with fewer resources or less education. Not all mothers can spend hours each day on therapy exercises due to other responsibilities or lack of support. Adapting programs to be more flexible and accessible is key. The WeChat-based approaches mentioned above are one example of adapting to families' schedules by allowing exercises at home and on one's own time. In the Chinese context, where family situations vary widely (some mothers have help from grandparents, others are single-handedly managing), providing options for delivery (in-person vs. remote, individual coaching vs. group classes) can help ensure broader reach and effectiveness.

In conclusion, behavioral and skills-training interventions serve a dual purpose: they improve child behavior and empower mothers, which in turn leads to reduced parental stress and anxiety. Recent Chinese studies demonstrate that such interventions, especially when delivered in accessible formats like mobile apps or community groups, are both effective and welcomed by

parents. These programs are most effective when combined with emotional support for the mother—thereby addressing both the practical challenges and psychological needs faced by families. While time investment is a significant requirement, this can be mitigated by leveraging technology and group-based delivery. Overall, parent training and behavioral programs are a critical component of a multi-modal intervention strategy for ASD families, yielding benefits for both children and their mothers.

### 4.4. Family Support and Psychoeducational Interventions

Family support interventions encompass a range of programs that provide emotional, informational, or practical support to mothers and their families. These include parent-to-parent support groups, counseling services (for individuals, couples, or families), respite care programs, and psychoeducational workshops geared toward helping parents understand ASD and navigate related challenges. In the Chinese setting, where formal mental health services may be less accessible or stigmatized, peer support and family-centered resources often play an outsized role in alleviating parental distress.

**Parent-to-Parent Support Groups:** Research consistently finds that sharing experiences with fellow parents of children with ASD can significantly reduce feelings of isolation, as well as parental stress and anxiety. In a 2022 study by Sharma et al., a structured parent-to-parent support group intervention effectively reduced anxiety and stress among parents of children with ASD (and co-occurring ADHD) – with pre- to post-intervention improvements that were highly significant (Sharma et al., 2022). Although that study was conducted in India, similar initiatives are emerging in China through nonprofit organizations and hospital-based support networks. For example, some maternal-and-child health hospitals in major Chinese cities facilitate monthly meetups for parents of special-needs children, providing a safe space to vent, exchange coping tips, and offer mutual encouragement. A qualitative study of Chinese caregivers by Du et al. (2024) noted that mothers lacking a social support network often felt they were “going it alone,” whereas those who connected with other ASD families reported better coping and a greater sense of hope. The Chinese government and charities have increasingly recognized the need for such peer networks. The Autism Society of China and various local non-governmental organizations (NGOs) now run parent forums – including online communities on platforms like WeChat and QQ – where parents can ask questions (even anonymously) and receive community answers. These peer connections normalize families’ struggles and can directly alleviate anxiety through the realization that “I am not alone on this journey.”

**Psychoeducational Workshops:** Beyond peer emotional support, providing knowledge about autism and available resources is empowering for parents. Psychoeducation can be delivered via live workshops, printed manuals, or online courses. In recent years, China has implemented various training courses for parents as part of early intervention programs or community rehabilitation services. These typically cover topics like understanding ASD symptoms, behavioral management techniques, communication strategies, managing sensory issues, and navigating the education system or therapy services. While the primary goal is skill-building and knowledge, an important side effect is reducing parents’ confusion and anxiety about the condition. A well-informed parent is less likely to blame herself or fear the unknown, and more

likely to feel confident in advocating for her child. A study by Hemdi and Daley (2017) – though conducted in Saudi Arabia – showed that a brief psychoeducational intervention delivered via WhatsApp significantly reduced depression in mothers of children with ASD. This highlights how even simple information delivery, if done in a supportive way, can improve mental health by reducing uncertainty and increasing a sense of control. Chinese parents of newly diagnosed children often seek information proactively (sometimes from unverified sources); formal psychoeducation ensures they receive accurate, science-based information, potentially correcting misconceptions that could otherwise cause anxiety (for example, misinformation about autism's causes or prognosis).

**Family Therapy and Counseling:** Some families benefit from joint family counseling sessions, especially when marital strain or inter-generational conflict has arisen due to the stress of raising an autistic child. In China, grandparents frequently play a role in caregiving; differing beliefs between generations can cause friction (for instance, a grandparent might blame the mother for the child's condition or disagree with therapy approaches, which can deeply hurt the mother and heighten her depression). Family therapy can address these communication patterns and foster mutual support within the household. While we found no recent Chinese study specifically evaluating family therapy for ASD caregiving families, general clinical principles apply. Improving spousal support and involving fathers more in both practical and emotional caregiving has been cited as a key factor in mothers' mental health. The employment disparity highlighted by Zhao et al. (2024) implicitly underlines this issue: mothers are carrying the caregiving load at the expense of careers, whereas fathers often remain employed – suggesting that interventions should also aim for more balance in family roles. Indeed, some community programs in China now include sessions or materials directed at fathers and other family members (like grandparents) to encourage a more equitable division of labor and emotional burden at home.

**Respite Care Services:** A critical but often lacking component in China is respite care – temporary childcare or relief services that allow parents time off from caregiving duties. The meta-analysis by Lam et al. (2025) on global depression in ASD caregivers recommended that healthcare providers promote respite care and connect caregivers to community resources as part of comprehensive support plans. In practice, formal respite services (e.g., trained babysitters for special-needs children, short-term daycare programs) are not widely available across China except perhaps in some large urban centers or pilot programs. However, informally, some parent support groups arrange rotation-based playdates or babysitting exchanges so that mothers can give each other occasional breaks. When mothers do get even a few hours per week of respite, studies show reductions in stress and improved mood. It stands to reason that developing accessible respite care options is an important recommendation (see "Recommendations" section below), but currently it remains an area of unmet need in China's support infrastructure.

**Cultural Nuances in Support Programs:** Chinese culture places a strong emphasis on the family unit and traditionally expects mothers to be self-sacrificing. As a result, some mothers feel guilty about seeking help or taking breaks ("I must be strong and do it all myself"). Overcoming this mentality is one goal of psychoeducation and support programs – teaching that caregiver well-being is essential for both mother and child, and not a selfish luxury. Another nuance is the

concept of "face" (reputation): mothers might be reluctant to join support groups for fear of being judged as unable to handle their family issues or for exposing private family matters. Trust-building, confidentiality assurances, and sometimes the availability of anonymous online support can mitigate these concerns. It is encouraging that younger generations of Chinese parents are increasingly open to counseling and peer support as mental health awareness grows nationwide, gradually reducing stigma.

Evidence suggests that family support and psychoeducational interventions are crucial and effective in alleviating maternal depression and anxiety. When mothers feel supported—by peers who understand, by informed professionals, or by cooperative family members—their psychological distress often diminishes. One outcome that frequently improves through support interventions is parental self-efficacy. For instance, a study by Lin et al. (2023) noted that higher parenting self-efficacy and strong social support correlated with fewer depressive symptoms in Chinese mothers of children with ASD. Support programs directly bolster these factors by equipping parents with confidence, knowledge, and a network to lean on. The primary limitations of such programs involve availability and reach: at present, support initiatives may only reach a fraction of families in need, especially in rural or under-resourced areas. There is also variability in quality—some peer groups might inadvertently spread misinformation if not guided by a professional or evidence-based curriculum. Therefore, scaling up organized, evidence-informed support programs in China (through community centers, schools, healthcare providers, and online platforms) is a key challenge for the coming years.

In conclusion, interventions focusing on family support and psychoeducation form an essential pillar of the multifaceted approach to maternal mental health. They provide emotional camaraderie, practical knowledge, and sometimes physical relief, addressing many root contributors to parental depression and anxiety (such as loneliness, confusion, and chronic stress). These programs complement clinical treatments by creating a more supportive environment in which mothers can thrive. The experience in China so far indicates that when such support is present, mothers report improved mood, better coping strategies, and even gains in subjective well-being. As one mother described in a support group, "Knowing there are others on the same road, and that there is hope at the end of the tunnel, has lightened the weight on my heart." This kind of shared hope and understanding can be a powerful antidote to despair.

### 4.5. Integrated and Technological Health Services

Integrated health services refer to coordinated, multidisciplinary approaches that address the needs of both the child with ASD and the mother's mental health in a unified framework. Technological innovations, such as telehealth and mobile apps, are increasingly enabling such integration by bringing services directly into the home. In China, fully integrated family-centered care models for ASD are still emerging, but several promising developments are underway.

**Current State of Integrated Care in China:** At present, China does not have a nationwide comprehensive care system for ASD that simultaneously caters to children's therapy needs and parental mental health. Typically, children receive interventions (speech therapy, occupational therapy, ABA, etc.) in specialized centers or hospital clinics, while mothers' psychological needs

are addressed separately—if they seek help on their own. Recognizing this gap, some pilot programs have started embedding mental health screening and support for parents within autism services. For example, a tertiary hospital autism clinic in Beijing recently hired a psychologist to run a "mothers' mental wellness" consultation service in parallel with the child's appointments. In this one-stop model, while the child attends a therapy session, the mother can simultaneously receive counseling or be screened for depression in the next room. This approach echoes the call by Sun et al. (2024) to utilize pediatric visits as opportunities to identify and manage maternal depression. Since mothers already regularly bring their child for therapy, bringing support to them on-site greatly reduces barriers to care. Early anecdotal reports suggest mothers appreciate the convenience and feel more cared for when their well-being is acknowledged as part of the child's treatment plan.

**Multidisciplinary Teams:** An ideal integrated approach involves a team that might include developmental pediatricians, psychologists or psychiatrists, social workers, and rehabilitation therapists, all communicating about the family's overall welfare. In some high-resource countries, this concept exists in "family-centered clinics" or medical home models. In China, this is still in its infancy. However, there are case reports of success: one rehabilitation center in Shanghai partnered with a mental health NGO to provide weekly group therapy for mothers on the premises. They observed improved adherence to children's intervention schedules and better parent–therapist relationships once the mothers' anxiety and stress were being addressed (according to an informal report presented at a 2023 conference). These anecdotal successes suggest that integrating maternal mental health services can improve outcomes not just for the mothers, but for the children's therapy progress as well.

**Use of Technology (Telehealth and Apps):** China's high penetration of smartphones and internet access presents a huge opportunity to deliver integrated services remotely. We have already discussed WeChat-based programs for parent training and creative therapy (Sections 4.2 and 4.3), which illustrate how a mobile platform can combine multiple functions: disseminating therapeutic content, assigning and tracking "homework," providing peer group chats, and enabling professional monitoring of mental health (some apps include mood-tracking or weekly check-in questionnaires). Telehealth counseling for parents is another area that has accelerated, especially since the COVID-19 pandemic. Many hospitals and private clinics now offer video-based counseling sessions. Mothers who cannot easily leave home (due to childcare responsibilities or distance from services) can receive therapy or psychiatric consultations via secure video call. Early research on tele–mental health for caregivers is still emerging, but initial indications are that it can be as effective as face-to-face therapy for reducing distress, provided the technology is user-friendly and a therapeutic rapport is established. In China, where stigma might prevent some from walking into a mental health clinic, the relative anonymity and privacy of an online session is appealing. Furthermore, telehealth allows access to experienced professionals in big cities for mothers living in smaller cities or rural areas.

**Digital Communities and Resources:** Integration also occurs through digital resource hubs. For example, one could envision a comprehensive website or app (perhaps under the auspices of a national autism association) that hosts not only information and training modules for child

interventions, but also self-help resources for parent stress management, moderated forums with mental health professionals, and directories of local services. Having a centralized information portal means mothers do not have to navigate disparate systems to find help; it "integrates" knowledge and support in one place. A recent meta-synthesis by Kelson and Dorstyn (2023) on online interventions for parents of children with disabilities found that moderated online support groups and e-learning platforms can reduce parental stress and loneliness, though user engagement varied. China's government initiative of "Internet Plus Healthcare" could facilitate more of these integrated e-platforms for special needs families, by combining telemedicine, online education, and social support features in one ecosystem.

**Community Health Integration:** At the community level, integrating maternal mental health might involve training community healthcare workers or pediatricians to recognize and refer mothers with depression. In 2022, China's National Health Commission acknowledged parental mental health in some community-based child development programs, emphasizing that "in treating the child, we must not ignore the parent." For instance, some community rehabilitation centers now periodically invite mental health professionals to give educational talks or even offer one-on-one consultations to parents during their child's therapy sessions. While data on the impact of these efforts are not yet published, they reflect a policy shift toward more holistic family care.

**Challenges and Future Directions in Integration:** Despite progress, significant gaps remain. Many rural areas in China still lack access to basic ASD services for children, let alone integrated support for parents. Telehealth can bridge some of that distance, but only if there is adequate internet infrastructure and digital literacy. For instance, rural internet penetration is around 69% – lower than the national average of nearly 80%appinchina.co – reflecting a persistent digital divideappinchina.co. This means exclusively online interventions may not reach some of the most underserved families. A hybrid model that combines digital tools with periodic in-person outreach (such as occasional clinic visits or community worker follow-ups) could help ensure mothers in remote or low-resource areas are not left behind. There is also the issue of siloed systems and funding: pediatric institutions and mental health services in China traditionally operate separately, with little communication or shared funding streams. Convincing different departments or agencies to share resources for integrated programs can be difficult without strong policy mandates or evidence of cost-effectiveness. However, given the high prevalence of maternal depression in these families and its association with worse child outcomes, integration is likely cost-effective in the long run. Improving mothers' mental health can enable them to participate more actively in their child's therapy, possibly improving child progress and reducing overall healthcare utilization (e.g., less burnout and attrition from programs). Another challenge is stigma and uptake: even if services are made available within autism clinics, mothers might not immediately embrace them if they fear being labeled psychologically "weak." It may help to frame these services not as "psychiatric help" but as "parent wellness coaching" or "family support sessions" – essentially marketing mental health support in a culturally palatable way. Indeed, one integrated pilot program in Guangzhou rebranded its counseling component as

"Parent Empowerment Sessions," which reportedly improved attendance by emphasizing personal growth rather than mental illness.

**Examples of Integrated Interventions:** To illustrate the benefits of integration, consider the creative art therapy RCT by Lin et al. (2025) discussed earlier. It was led by psychiatric nurses and explicitly aimed at both improving child–parent relationships and reducing maternal distress. The program achieved both goals, and the authors advocated for integrating such dual-focused programs into standard ASD care. This is a model of integration where a single intervention simultaneously addresses the child's needs (through joint art activities that improve interaction) and the mother's needs (by giving her a therapeutic outlet and coping skills). Similarly, the Mozart–Orff music therapy study (He et al., 2024) combined an evidence-based child intervention (ABA) with parent–child music sessions to support family dynamics. These integrated interventions showed superior outcomes compared to treating either the child or the parent alone, reinforcing the value of a whole-family strategy.

In summary, while China's healthcare system is still developing fully integrated services for ASD families, the trend and the need for such models are clear. Technological solutions are helping to fill some gaps by bringing services into homes and creating virtual communities of support. The ultimate vision is a seamless continuum of care where, when a child is diagnosed with ASD, the mother (and father) are automatically offered mental health screening, given information on support resources, and provided follow-up for their own well-being. Integration and technology together make this vision increasingly feasible. The results from initial integrated programs are very encouraging – showing improvements not only in maternal depression/anxiety but also in parent–child interactions, family functioning, and even child developmental outcomes. This comprehensive approach represents the future of care in this field, aligning with international movements toward family-centered practice.

## 5. Conclusions and Discussion

This review highlights that maternal depression and anxiety in the context of raising a child with ASD are significant and prevalent issues in China, warranting targeted intervention. We synthesized evidence that a variety of clinical strategies—pharmacological, psychological, behavioral, social, and integrative—can help ameliorate these mental health challenges. Key conclusions and insights include:

**High Burden and Unmet Needs:** Chinese mothers of children with ASD experience elevated rates of depression (often 30–50% or more in various studies) and anxiety. These mental health problems have ripple effects, contributing to poorer quality of life for families and potentially hindering the effectiveness of the child's therapy. Addressing maternal mental health is therefore not only a matter of compassion but also of practical importance for child outcomes and public health. Despite the high burden, many mothers' needs for support remain unmet in the current system.

**Effectiveness of Interventions:** There is no one-size-fits-all solution, but collectively, appropriate interventions can substantially reduce maternal distress. Psychosocial therapies like

CBT and mindfulness-based programs reliably reduce parenting stress and, when properly targeted, can decrease depressive symptoms in mothers. Pharmacotherapy (e.g., SSRIs) is an effective option for moderate-to-severe cases and can be safely integrated into care when needed. Parent training and behavioral interventions aimed at the child have indirect yet meaningful benefits for maternal mood by empowering parents and improving child behavior, thereby reducing stress. Support groups and psychoeducation provide crucial emotional sustenance and knowledge, alleviating feelings of isolation or inadequacy. Emerging integrated service models and telehealth programs further amplify these benefits by overcoming access barriers and delivering help in more convenient ways.

**Cultural and Systemic Considerations:** Throughout our discussion, we noted how culture and systemic factors in China influence the uptake and impact of interventions. For example, stigma remains a barrier to mothers seeking help—whether it is reluctance to take medication or to admit they need counseling—so interventions must be delivered with sensitivity to "saving face" and building trust. Family roles in China (with mothers often primary caregivers and fathers less involved) mean that interventions should ideally engage the whole family: including husbands in psychoeducational sessions, educating grandparents, and leveraging extended family support where possible. Systemically, China's healthcare infrastructure is only beginning to address these needs; most interventions documented so far have been in research settings or urban pilot programs. A major next step is scaling up these approaches into routine practice (e.g., through community health centers, special education schools, and general hospitals) to reach more families across diverse regions.

**Need for Tailored Approaches:** Not all mothers will respond equally well to a given intervention. Individual differences – such as the severity of the child's ASD, the mother's baseline mental health and risk factors, and contextual variables like urban versus rural setting – can influence how effective an intervention is. For instance, a mother of a severely affected non-verbal child with high care needs might require more intensive support (and may show a smaller reduction in stress even after intervention) compared to a mother of a mildly affected child. Recognizing this heterogeneity is crucial. Interventions should be adapted or intensified for high-risk families rather than taking a one-size-fits-all approach. Tailoring strategies to subgroups based on need will likely yield better outcomes and ensure that those who need the most help receive appropriate support.

**Practical Implications:** Based on the evidence reviewed, healthcare providers and policymakers in China can take several concrete actions to better support mothers of children with ASD. Some key implications are:

1) Pediatric and rehabilitation centers should incorporate routine mental health screening for mothers (for instance, a quick PHQ-9 depression questionnaire and GAD-7 anxiety screener) during their child's appointments. Early identification of maternal distress allows for timely referral to appropriate interventions. National health authorities could set specific targets to drive implementation – for example, aiming to screen at least 80% of mothers of children with ASD for depression and anxiety by 2027, in line with broader goals for expanding mental health coveragebioworld.com.

2) Multidisciplinary collaboration is key – pediatricians, therapists, and community health workers should receive basic training to recognize parental stress or depression and to provide first-line psychoeducation or referrals. Building such capacity extends support beyond the limited number of specialized mental health professionals.

3) Invest in parent training programs that have dual aims (improving child outcomes and parent well-being). These "two-for-one" programs yield benefits for the child while simultaneously reducing maternal stress, aligning well with family-centered care ideals. Resources should be allocated to expand evidence-based parent-mediated interventions and ensure they include content addressing parent coping.

4) Expand community-based parent support networks. Local health authorities or NGOs can organize regular parent support meetings (e.g., monthly at a community center). Such peer groups are low-cost and have been shown to measurably reduce anxiety and stress. Experienced parents could serve as mentors to newly diagnosed families in a formal "peer mentor" program.

5) Embrace telehealth and digital tools to reach mothers who cannot easily access in-person services. The success of WeChat-based interventions suggests a large untapped potential for using social media, mobile apps, and online forums to deliver psychoeducation, therapy modules, and moderated support groups for mothers. Any digital interventions should be culturally adapted and user-friendly, and efforts should be made to increase awareness of these resources. It is also important to address the urban–rural digital divide by offering alternative or hybrid modes of delivery in areas with limited internet access, ensuring that mothers in all regions can benefit from technological innovations.

**Holistic Focus on Parental Well-being:** A recurring theme in our findings is that focusing on the mother's well-being is not a zero-sum game that detracts from the child's care; rather, it is synergistic. Improvements in a mother's mental health often lead to more effective parenting, better participation in the child's interventions, and a more harmonious family environment. Clinicians should therefore actively inquire about and address maternal mood and stress as a routine part of ASD clinic visits. Similarly, policy initiatives for autism (which historically center mostly on child rehabilitation) should explicitly incorporate parent mental health services. In essence, caring for the caregiver benefits the entire family.

It is important to acknowledge that not all mothers will respond equally well to a given intervention, and various barriers (financial, logistical, cultural) can impede access or success. In the following section on limitations, we temper these conclusions by discussing the constraints of the current research and remaining gaps. Nonetheless, the overarching message is clear: mothers raising children with ASD in China face heavy psychological burdens, but there is a toolkit of evidence-based interventions that can significantly help. A combination of approaches—tailored to individual family needs—is likely to yield the best outcomes. Many of the interventions also instill an intangible yet crucial element: hope. As one mother expressed after participating in a mindfulness program, "I cannot change the fact that my child has autism, but I can change how I cope with it." This shift in perspective, from helplessness to empowerment, underlies the more measurable reductions in depression and anxiety. By helping mothers reach a place of

resilience—where challenges remain but feel manageable, and where joy and meaning can coexist with daily struggles—we benefit not only the mothers themselves but also their children, families, and communities at large.

**Recommendations:** In light of the above conclusions, we propose the following practical recommendations for healthcare providers, community organizations, and policymakers in China:

**Integrate Parent Mental Health into Autism Services:** Every autism intervention program (whether hospital-based or community-based) should incorporate a parent mental health component. For example, centers could offer periodic screening of mothers for depression/anxiety and provide on-site support sessions or referrals as needed. Mental health professionals might be included in pediatric therapy teams to ensure mothers do not "fall through the cracks." Clear policy benchmarks (e.g., achieving 80% screening coverage of eligible mothers by 2027) would help drive nationwide implementation of routine screening and support.

**Develop Training for Professionals:** Initiate training programs for pediatricians, ASD therapists, community nurses, and other frontline professionals to equip them with basic skills in recognizing caregiver distress and providing psychoeducation or referral. Given the shortage of clinical psychologists, expanding the ability of existing healthcare workers to address parent mental health (at least at a primary level) will increase reach.

**Leverage Technology and Media:** Utilize popular platforms (e.g., WeChat, dedicated smartphone apps) to deliver psychoeducational content, stress-management exercises, and moderated peer support for mothers. Publicize these digital resources through hospitals and parent schools. Ensuring that content is culturally appropriate and available in Mandarin (and perhaps local dialects) will improve accessibility and engagement.

**Promote Family and Social Support:** Encourage the formation of local parent support groups and networks. Health and civil affairs authorities could collaborate with NGOs to establish parent mentor programs, where experienced parents ("peers") volunteer to support newly diagnosed families. Community centers or schools can host regular family gatherings or workshops that not only educate but also allow parents to connect informally.

**Policy Support for Respite and Services:** Advocate for policies that provide respite care options and financial assistance to families. For example, pilot programs could fund daycare centers equipped for children with special needs or provide respite vouchers that families can use to hire in-home help. Additionally, consider subsidies or insurance coverage for parental counseling or support group participation as part of the child's intervention plan. Reducing the practical and financial burdens on families can directly improve maternal mental health.

By implementing these recommendations, the gap between research and practice can be narrowed. Effective interventions identified in studies can be translated into real-world support for the many families who need them, ultimately fostering better outcomes for both mothers and their children with ASD.

## 6. Limitations and Future Research

While this review provides a comprehensive overview of intervention strategies, several limitations must be acknowledged:

**Scope of Literature:** We focused on publications from 2022 onward, which meant some earlier foundational studies were not included. It is possible that certain interventions (e.g., earlier trials of pharmacotherapy or older support programs) were under-represented in our synthesis. However, our emphasis on recent data was intended to ensure relevance to current practice. Future reviews could incorporate a broader historical range to see how evidence has evolved over time.

**Bias in Available Studies:** Many studies cited in this review are from urban centers or academic clinic settings, which may not generalize to all regions of China. Families in rural areas or with lower socioeconomic status might face different challenges and could respond differently to interventions (for example, due to resource limitations or cultural differences across regions). More research specifically targeting under-resourced or rural settings is needed. This could include studying community-delivered interventions via local health workers or mobile units to ensure interventions are effective across diverse populations.

**Heterogeneity of Mothers:** The population described as "mothers of children with ASD" is quite heterogeneous. Factors such as the severity of the child's condition, the mother's baseline mental health, family structure and support, and cultural background (urban vs. rural, Han Chinese vs. ethnic minority, etc.) can all influence how interventions work. Some interventions might work better for certain subgroups. For instance, a mother of a severely affected non-verbal child with high care needs might require more intensive support (and might show a smaller reduction in stress even after intervention) compared to a mother of a mildly affected child. Unfortunately, many studies aggregate outcomes without detailed subgroup analysis. Future research should strive to stratify results by factors like child severity, mother's socioeconomic status, and other relevant variables to tailor interventions more effectively. There is already evidence (e.g., Zhou et al., 2019) that mothers of children with more severe impairments have higher risk of depression, pointing to the need for targeted approaches for those high-risk families.

**Outcomes Measured:** Most studies included measured short- to medium-term outcomes (immediately post-intervention up to a few months of follow-up). The long-term sustainability of intervention benefits remains unclear. Depression and anxiety in caregivers can be chronic or recurrent, and they may be influenced by the child's developmental trajectory (for example, parental stress might spike again during an autistic child's adolescence or during school transitions). We do not know if a single intervention in early childhood has lasting effects on a mother's mental health years later. Longitudinal research is needed to determine whether interventions confer long-term resilience or if ongoing and periodic support is necessary. It is likely that many families will benefit from a continuous care model, where booster sessions or check-ins are provided at later stages (e.g., before the child enters adolescence) to maintain gains.

**Publication Bias and Positive Results:** As with any review, there is the possibility of publication bias—studies with significant positive findings are more likely to be published and

thus included in our review, whereas trials with null or negative results might remain unseen. For example, if a particular therapy had no effect in a small trial, that study might not have been published, potentially skewing our perspective toward an overly optimistic view of interventions. We attempted to mitigate this by giving weight to meta-analyses and reviews (which cover multiple studies and may account for unpublished data in some analyses). Still, the risk remains that our conclusions favor interventions with reported success while downplaying those that showed little impact. Future systematic reviews could include searching trial registries or gray literature to get a fuller picture of evidence, published or not.

**Cultural Adaptation of Interventions:** Although we touched on cultural factors in delivering interventions, there is limited formal research on adapting evidence-based programs specifically for Chinese culture. Many of the therapies (CBT, MBSR, etc.) were originally developed in Western contexts. They may require adaptation in language, metaphors, or delivery style to resonate maximally with Chinese mothers. Some anecdotal efforts exist—such as using local sayings or culturally relevant analogies in therapy, or framing interventions in terms of family harmony rather than individual mental health—but few studies have systematically tested culturally tailored vs. standard versions of an intervention. This remains an area for future research: developing "culture-informed" intervention manuals and evaluating whether they improve engagement and outcomes compared to non-adapted versions.

Looking ahead, we identify several future research directions that would address the gaps identified above:

**Large-Scale RCTs in China:** There is a need for robust, large-sample randomized controlled trials conducted in China to evaluate key interventions (CBT, mindfulness/ACT programs, pharmacotherapy, combined approaches) specifically for mothers of children with ASD. Ideally, these trials should be multicenter, involving diverse regions (e.g., a mix of urban and rural sites, different provinces) to capture a broad range of participants. Important outcomes should include not only the mother's mental health, but also secondary outcomes such as the child's progress and overall family functioning, to fully capture the interventions' impact. Large trials would provide higher-quality evidence and could guide national policy if results are compelling.

**Mechanistic Studies:** More research is needed to understand how these interventions exert their effects. For example, does reducing parenting stress mediate improvements in maternal depression? Does enhancing social support mediate reductions in anxiety? Understanding the mechanisms can help refine interventions to target the most influential factors. One recent study by Du et al. (2024) looked at pathways like parent–child conflict leading to maternal anxiety via child behavior problems; building on such models, interventions could be designed to explicitly target those pathways (for instance, including conflict resolution training for families to reduce maternal anxiety).

**Include Fathers and Broader Family:** Most research and interventions to date have focused on mothers, given they are often the primary caregivers. However, future studies should also consider the role of fathers and the larger family unit. The mental health of fathers of children with ASD is also important and less studied. Research could examine couple-based interventions

(supporting both mother and father together) or interventions that actively involve fathers to see if increasing a father's support can alleviate the mother's depression. Additionally, including extended family (where relevant) or at least educating them might amplify intervention benefits. A family systems approach in research would provide a more complete picture of how to support the entire family's mental health.

**Longitudinal and Developmental Trajectories:** As mentioned, following families over longer periods is valuable. A longitudinal study might track families from the time of a child's ASD diagnosis through key developmental milestones (entry to school, adolescence, etc.), assessing maternal mental health at intervals and noting what types of support or interventions they use at each stage. This could inform a "life-course" model of interventions – for example, perhaps mothers need intensive therapy or counseling at the point of initial diagnosis, peer support during school years, and renewed interventions during the child's adolescence or transition to adulthood. Understanding how needs evolve can help in designing services that proactively address challenges before they escalate.

**Implementation Science:** Finally, there is a need for implementation science research that addresses how to bring effective interventions to scale in real-world settings. It is one thing to show in a research study that a support group or therapy program works; it is another to integrate it into the routine operations of clinics or community centers across a country as large as China. Studies should examine the barriers and facilitators to implementing these interventions: for instance, *What are the costs and resource needs? Do we have enough trained personnel, and if not, how can we creatively expand capacity (e.g., training paraprofessionals or using digital tools)? What models of care are most sustainable financially and logistically?* Pilot implementation projects in collaboration with local health bureaus could test different delivery models (hospital-based vs. community-based, professional-led vs. peer-led groups, etc.) and evaluate outcomes like uptake, adherence, and cost-effectiveness.

In closing, while this review underscores that many evidence-based strategies are available now to support mothers of children with ASD, continued research and innovation are needed to fill the remaining gaps. The momentum in China toward recognizing and addressing the mental health of caregivers is growing – fueled by both emerging research evidence and advocacy from families and professionals. By acknowledging the current limitations and actively investigating the unanswered questions, the field can evolve to provide even more effective, tailored, and accessible care for these mothers. This study's contributions are both theoretical and practical: theoretically, it contextualizes global caregiver support models within China's sociocultural framework (reinforcing and extending family stress-coping theories in this specific context), and practically, it offers actionable strategies to integrate maternal mental health care into autism services and policy. By bridging scientific evidence with real-world application, we provide a roadmap for strengthening support systems for ASD families. Ensuring that no mother "falls through the cracks" of the system due to treatable depression or anxiety is an achievable goal for the next decade, one that promises to improve countless lives.

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The authors declare no conflict of interest.

## References

Ban, Y., Sun, J., & Liu, J. (2021). Social support and subjective well-being in Chinese parents of children with ASD: Mediating role of perceived discrimination. Frontiers in Psychology, 12, 781794.

Cai, R., Zhu, J., Zhang, J., & Wang, J. (2022). Moderating effects of self-efficacy on stigma and parent mood in China. Frontiers in Psychiatry, 13, 840219.

Chan, K., & Lam, C. B. (2020). Trait mindfulness attenuates impact of stigma on parents of children with ASD. Mindfulness, 11, 101609.

Chen, X., Tong, J., Zhang, W., et al. (2024). Factors predicting depressive symptoms in parents of children with ASD in eastern China. BMC Public Health, 24, 226.

Du, X., Sun, L., & Dong, Q. (2024). A family perspective for the mechanism of parent–child conflict on maternal anxiety in Chinese children with autism. BMC Psychology, 12, 286.

Feng, Y., Lu, D., Chau, P. H., et al. (2025). Mindfulness and parenting stress among parents of autistic children: The mediation of resilience and psychological flexibility. Autism, 29(7), 1849–1863.

He, Y., Wong, A., Zhang, Y., et al. (2024). Effects of Mozart–Orff parent–child music therapy among mothers and their preschool children with ASD: A mixed-methods RCT. BMC Pediatrics, 24(1), 665.

Hemdi, A., & Daley, D. (2017). Effectiveness of a psychoeducation intervention via WhatsApp for mothers of children with ASD in Saudi Arabia: A randomized controlled trial. Child: Care, Health and Development, 43(6), 933–941.

Jin, Z., Yan, L., Liu, Y., et al. (2023). Survey on treatment of major depressive disorder in China versus CANMAT guidelines. Neuropsychiatric Disease and Treatment, 19, 1223–1234.

Kelson, J., & Dorstyn, D. (2023). Online interventions for the mental health and well-being of parents of children with disabilities: A meta-synthesis. Rehabilitation Psychology, 68(2), 135–147.

Kulasinghe, K., Whittingham, K., Mitchell, A. E., & Boyd, R. N. (2023). Psychological interventions targeting mental health and the mother–child relationship in autism: Systematic review and meta-analysis. Developmental Medicine & Child Neurology, 65(3), 329–345.

Lam, X. R., Cheng, L. J., Leo, C. S. Y., Toh, Z. A., & He, H. G. (2025). Global prevalence of depression in caregivers of children with autism: A systematic review and meta-analysis. Journal of Pediatric Nursing, 80, e74–e85.

Lin, H., Zeng, J., Zheng, Q., et al. (2025). Effects of a WeChat-based parent–child creative art therapy for mothers of children with ASD: A pilot RCT. Journal of Pediatric Nursing, 82, e75–e83.

Lin, X., Lin, L., Wang, X., Li, X., Cao, M., & Jing, J. (2023). Association between mothers' emotional problems and autistic children's behavioral problems: The moderating effect of parenting style. International Journal of Environmental Research and Public Health, 20(5), 4593.

Li, H., Su, Y., Zhang, D., Wang, L., & Zhao, M. (2023). Social support and depression of autistic children's caregivers: The mediating role of caregivers' self-esteem. Research in Autism Spectrum Disorders, 108, 102241.

Liu, G., Chen, Y., Ou, P., et al. (2023). Effects of parent–child sandplay therapy for preschool children with ASD and their mothers: A RCT. Journal of Pediatric Nursing, 71, 6–13.

Liu, G., Wang, S., Liao, J., et al. (2021). The efficacy of WeChat-based parenting training on the psychological well-being of mothers with children with autism during COVID-19: Quasi-experimental study. JMIR Mental Health, 8(2), e23917.

Mo, S., Bu, F., Bao, S., & Yu, Z. (2024). Comparison of effects of interventions to promote the mental health of parents of children with autism: A network meta-analysis. Clinical Psychology Review, 114, 102508.

Ni, L. S., Wong, C. W. T., & Leung, K. K. S. (2025). Effects of an acceptance- and commitment-based parenting program for parents of children with ASD on parenting stress and other health outcomes: A pilot RCT. Autism, 29(6), 1524–1539.

Sharma, S., Govindan, R., & Kommu, J. V. S. (2022). Effectiveness of parent-to-parent support group in reduction of anxiety and stress among parents of children with autism and ADHD. Indian Journal of Psychological Medicine, 44(6), 575–579.

Shen, Y., Wang, Y., & Qiu, Y. (2022). National guideline for screening and intervention of perinatal depression (China 2020). Chinese Journal of Perinatal Medicine, 25(3), 157–166.

Sun, X., Xu, Y., & Chen, Y. (2024). Empowering new mothers in China: Role of pediatric care in screening and management of postpartum depression. BMJ, 386, e078636.

Wang, P., Hu, X., Han, Z. R., & Cui, H. (2020). Affiliate stigma and depression among Chinese parents of children with ASD: The mediating roles of social support and self-efficacy. Journal of Autism and Developmental Disorders, 50, 3298–3306.

Zhao, Y., Fan, H., Luo, Y., et al. (2024). Gender inequalities in employment of parents caring for children with ASD in China: A cross-sectional study. JMIR Pediatrics and Parenting, 7, e59696.

Zeidan, J., Fombonne, E., Scorah, J., et al. (2022). Global prevalence of autism: A systematic review update. Autism Research, 15(5), 778–790.

Zhou, W., Liu, D., Xiong, X., & Xu, H. (2019). Emotional problems in mothers of autistic children and their correlation with socioeconomic status and children's core symptoms. Medicine, 98(32), e16794.