

Parenting Stress, Quality Of Life And Social Support In Parents Of Children With Autism Spectrum Disorder In Asian Countries: A Scoping Review

(Tekanan Keibubapaan, Kualiti Hidup dan Sokongan Sosial dalam kalangan Ibu Bapa Kanak-kanak dengan Gangguan Spektrum Autisme di Negara-negara Asia: Satu Kajian Skop)

Nurul Izzati binti Adlee, Noh Amit*, Mahadir Ahmad

Clinical Psychology and Behavioural Program, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abdul Aziz, 50300 Kuala Lumpur, Federal Territory of Kuala Lumpur, Malaysia.

*Corresponding author: Noh Amit
Email address: nohamit@ukm.edu.my

Abstract

Parenting children with autism spectrum disorder comes with challenges that impact parenting stress and quality of life, with social support being an influencing factor. The cultural context appears to influence associations between parenting stress, social support, and quality of life. There is a lack of reviews examining these associations in Asia. Thus, this review aims to provide an overview of the relationship between parenting stress, QOL and social support specific to the population in Asian countries. Systematic searches based on PRISMA guidelines were conducted on Medline, Web of Science, and Scopus, which found 26 eligible studies to be included in the review. Findings from the studies demonstrated social support, parenting stress, and quality of life to be significantly associated with each other directly and indirectly. They are also related to multiple variables like coping strategies and self-efficacy. In the future, data from a wider scope of Asian countries will be beneficial since most literature originated from China. Furthermore, more studies on potential moderator and mediator variables could be conducted.

Keywords: Parenting stress; Quality of life; Autism spectrum disorder; Scoping review

Abstract

Tugas seorang penjaga untuk membesarkan anak yang mempunyai gangguan spektrum autisme merupakan tanggungjawab mencabar yang memberi impak terhadap tekanan keibubapaan dan kualiti hidup penjaga. Sejurus itu, sokongan sosial juga menjadi faktor penting yang mempengaruhi kualiti hidup sebagai ibu bapa kepada kanak-kanak mempunyai gangguan spektrum autisme. Konteks dari segi kebudayaan di negara yang berbeza kemungkinan akan mempengaruhi hubungan antara tekanan keibubapaan, sokongan sosial dan kualiti hidup. Terdapat kekurangan ulasan yang mengkaji hubungan antara pembolehubah ini di Asia. Oleh itu, kajian ini bertujuan untuk memberi ulasan tentang hubungan antara tekanan keibubapaan, sokongan sosial dan kualiti hidup. Sejurus itu, pencarian sistematis berdasarkan garis panduan PRISMA dijalankan di Medline, Web of Science, dan Scopus. Pencarian ini telah mendapat 26 kajian layak disertakan dalam ulasan ini. Hasil kajian-kajian tersebut menunjukkan sokongan sosial, tekanan keibubapaan, dan kualiti hidup dikaitkan secara signifikan antara satu sama lain secara langsung dan tidak langsung. Ia juga berkaitan dengan beberapa pembolehubah seperti strategi daya tindak emosi dan efikasi kendiri. Pada masa hadapan, data daripada skop negara Asia yang lebih luas akan memberi manfaat kerana kebanyakan kesusasteraan berasal dari China. Tambahan pula, lebih banyak kajian tentang potensi pembolehubah penyederhana dan pengantara dalam hubungan antara tiga pemboleh ubah tersebut boleh dijalankan.

Kata kunci: Tekanan keibubapaan; Kualiti hidup; Spektrum kecelaruan autisme; Tinjauan Skoping

INTRODUCTION

Autism spectrum disorder, or autism, is a neurodevelopmental disorder affecting children worldwide. In Asia, the estimated prevalence of autism spectrum disorder in children is 0.41% (Talantseva et al. 2023), while in Malaysia, it stands at 1.6% (Malaysian Ministry of Health 2016). Parents of children with autism spectrum disorder (PCA) face unique challenges, including increased caregiving responsibilities (Chaidi & Drigas 2020; Crowell et al. 2019; Stoner & Angell 2006) and close, active involvement in their child's assessment and intervention process (Burrell & Borrego 2012; Estes et al. 2019). Meta-syntheses of experiences raising children with autism spectrum disorder consistently highlight recurring psychological distress, disruptions in family life, and lack of support avenues (Ooi et al. 2016; Shorey et al. 2020).

PCA are more prone to psychopathological symptoms, with depressive and anxiety symptoms reported at rates more than twice the global prevalence (Schnabel et al. 2019). Parenting stress, defined as the specific distress and discomfort where parents' perceptions of parental demands outweigh their resources (Coulacoglou & Saklofske 2017; Deater-Deckard 1998), is higher among PCA compared to parents of typically developing children and those with other neurodevelopmental disorders (Ni'matuzahroh et al. 2021; Turda 2023). In Malaysia, 90.4% of PCA experience parental distress, with 53.8% of them exhibiting clinical-level psychological disturbances (Nikmat et al. 2008). A systematic review on South-East Asian PCA proposes parenting stress as a component of psychological stress affecting various factors such as anxiety, depression, hopelessness, resilience, parental satisfaction, family functioning, and quality of life (Ilias et al. 2018).

Quality of life (QOL) refers to the perceived state of general well-being based on personal values and aspirations (Fayers & Machin 2013). QOL as a construct has been defined by the World Health Organization (WHO) as an 'apostrophe to show ownership in individuals perception of their position in life in the context of their culture and value systems, and in relation to their goals, expectations, standards and concerns' (The WHOQOL Group 1995). This conceptualizes QOL as a multidimensional measure of well-being comprising six domains: physical health, psychological health, level of independence, social relationships, environment, and spirituality (The Whoqol Group 1995). PCA tend to report below average QOL across multiple domains, including physical, psychological, and social domains (Kuhlthau et al. 2014; Turnage & Conner 2022). Research indicates that parenting

stress negatively impacts QOL (Ilias et al. 2018; Ni'matuzahroh et al. 2021), with perceived stress identified as a significant predictor of PCA's QOL in Malaysia (Isa et al. 2021).

Social support, defined as the resources provided to an individual through their own social network (Veiel 1985), is commonly cited as a key unfulfilled need for PCA (Derguy et al. 2015; Goh et al. 2021; Hartley & Schultz 2015; Shorey et al. 2020). Multiple reviews highlight social support as a prominent factor influencing parenting stress of PCA in Asia, with studies reporting insufficient social support leading to higher parenting stress (Ilias et al. 2018; Ng et al. 2021; Porter & Loveland 2019). A mixed-methods study found that lack of support systems adversely influenced PCA's QOL, including financial and relationship strain, and physical health challenges (Kuhlthau et al. 2014). Research further suggests social support as a significant predictor of PCA's parenting stress and may act as a protective factor against psychological distress (Higgins et al. 2023; Sarwar et al. 2022).

The Caregiving Burden and Care Process Model can be used to explain the caregiving process of children with developmental disabilities. It proposes five interrelated constructs comprising the parenting experience of children with developmental disabilities: background and context; child characteristics; caregiver strain; intrapsychic factors; and coping and health outcomes (Raina et al., 2004). Accordingly, this model suggests that parenting stress, QOL and social support are interrelated, although the nature of these associations can vary (Raina et al. 2004).

A recent meta-analysis found moderately strong negative associations between parenting stress and both social support and QOL, while moderately strong positive associations were reported between social support and QOL (Wang et al. 2022). Wang et al. (2022) also suggested parenting stress as a potential mediator between social support and QOL in both Asian and Western contexts. Another review suggests social support may moderate the relationship between parenting stress and QOL (Ni'matuzahroh et al. 2021). However, Isa et al. (2021) argues that parenting stress mediates only the relationship between financial support and QOL in PCA.

Cultural context appears to influence these associations, as noted by Wang et al. (2022). Despite this, there is a lack of reviews examining the quantitative associations between parenting stress, social support, and QOL for PCA in Asia. Therefore, this review aims to answer: how are parenting stress, social support, and quality of life of PCA in Asian countries associated? This systematic review aims to provide a synthesis of the literature, offering insights into these relationships.

METHODS

This systematic review was conducted in line with PRISMA guidelines (Matthew et al. 2021).

Systematic search

A systematic search was conducted in October 2024 with the search strategy used comprising four main

concepts: “support”, “parents”, “autism spectrum disorder”, and “quality of life”. The search was run on three databases: Ovid MEDLINE, Scopus, and World of Science. Preliminary searches were conducted, and expert agreement obtained to determine the suitability of the search strategy.

The final search strategy is demonstrated in Table 1. All the alternatives for search strategies across databases are also included in Appendix A.

Table 1. Final search strategy

Support	Quality of life	Parenting Stress	Parents	Autism spectrum Disorder
Peer support	Qualit* of life	Parent* stress	Parent*	ASD
Social support	QOL	Parent* distress	Mother*	Autism
Support group	Life quality*	Maternal stress	Father*	Autistic
Family support		Paternal stress	Caregiver*	
Organisational support	Value* of life	Family stress	Guardian*	Autism spectrum disorder*
Informational support	Life value*	Child rearing stress		Autistic disorder* Asperger* syndrome
Emotional support	Quality of well-being	Parent-related stress Parenting hassles		Pervasive development* disorder*
	QWB	Caregiver stress Caregiver strain		

Data retrieval, assessment, and selection.

The studies retrieved from the systematic search were exported using Endnote X20 software. Duplicates were removed in two stages: first using the Endnote automated feature and then manual removal. The subsequent results were then screened in two stages: first through screening study titles and abstracts and later through screening full texts. Studies that do not meet the eligibility criteria will be excluded. The Endnote X20 software was used throughout the process to manage and code the retrieved studies (Peters 2017).

Eligibility criteria

The inclusion criteria for studies require them to be original publications based on individual-level data and written in English. Secondly, the sample population would need to include parental caregivers of children with a diagnosis of autism spectrum disorder. Thirdly, the studies must measure at least two variables between parenting stress, social support, and quality of life. Additionally, they should report a quantitative measure of the associations between any of these variables. The study design should also be either correlational study design, observational study design, or case

series. Lastly, the study sample originates from a country on the Asian continent.

The following exclusion criteria were applied. First, studies were excluded if they reported only qualitative outcomes. Studies with no specific country of origin were also excluded.

Data extraction and synthesis

Data from eligible studies were extracted to produce a narrative synthesis. Information about relevant study characteristics was collected, along with outcome-specific data, to support the development of the synthesis.

Quality appraisal

The methodological quality of a study and risk of bias were appraised using the Joanna Briggs Institute (JBI) Checklist for cross-sectional studies (Sterne et al. 2016). It assesses various aspects regarding sample inclusion criteria, like study subjects and setting, exposure and outcomes measurement, confounding factors, and statistical analysis. Accordingly, eight questions for the eight domains are posed that assisted quality appraisal. Judgements for each item were combined to conclude an overall risk of bias rating for each study.

Overall quality appraisal judgements for all included studies are shown in Table 5 (see Appendix B). All studies demonstrated low risk of bias and were included in the review. Although there were unclear judgments of bias due to insufficient reporting of study demographics or methods to address bias, all studies adequately reported their study design and methodologies. Furthermore, all studies identified and acknowledged any risk of bias or presence of confounders. While several studies adapted or utilized researcher-developed questionnaires, they were based on established theoretical frameworks or adapted from existing validated scales. Furthermore, the majority who utilized such measures also supplemented their measures with valid and reliable measures. It might be prudent to mention that certain researcher-developed questionnaires aimed to measure multiple construct domains yet lacked clarity on the specific items intended to measure the specific construct (Alshaban et al. 2024).

RESULTS

Search and Screening

During the literature search, 368 studies were identified from Scopus, Ovid Medline, and Web of Science. The systematic search and subsequent screening were carried out in January 2024. The studies were exported into Endnote X20 and the ‘remove duplicates feature’ on Endnote was used to remove automatic duplicates. Besides that, the items were screened manually for duplicates on Endnote X20. A total of 43 duplicates were identified. Initial screening of the items led to a total of 86 studies that underwent full text screening. The screening process was conducted with one reviewer and aided by an expert reviewer. A third expert reviewer was identified for consult in the case of any disagreements needed to be resolved. During the second screening, a total of 60 studies were excluded. Thus, a total of 26 studies were included in the review (refer to Figure 1).

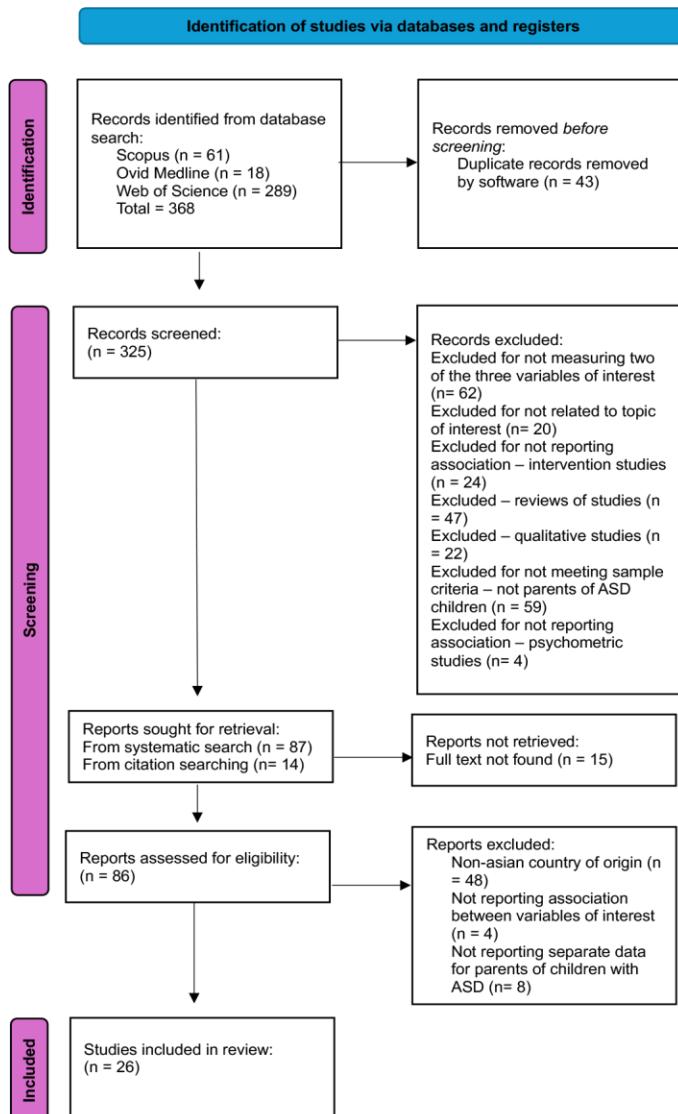


Figure 1. PRISMA Flow Diagram

A total of 26 studies were included in this review. Most studies, 48 of them, were excluded due to the study setting being a non-Asian country. Four studies were excluded due to not reporting any association between variables of interest (Chen et al. 2024; Erdem & Avsar 2024; Faden et al. 2023; Obeid & Daou 2015). Eight studies were excluded for not

reporting separate data between parents of children with autism spectrum disorder and either caregivers of children with autism spectrum disorder or parents with children with other neurodevelopmental disorders (Huang et al. 2014; Isa et al. 2021; Ji et al. 2014; Lei & Kantor 2022, 2023; Taub & Werner 2016; Wakimizu et al. 2017; Widyawati et al. 2022).

Table 2. Overview of characteristics of included studies

No.	Study	Study Design	Country	Participants	Sample size (Male/Female)	Age range of parents/ years	Age range/ Mean age of children
1	Alhuzimi (2021)	Cross-sectional	Saudi Arabia	Parents of children with ASD	150 parents (39 male; 111 female)	21-50	2-18 years
2	Alshaban et al. (2024)	Cross-sectional (part of mixed methods study)	Qatar	Parents of children with ASD	271 parents (84 male; 187 female)	N/A	3-18 years
3	Ban et al. (2021)	Cross-sectional	China	Parents of children with ASD	204 parents (60 male; 138 female)	23-48; mean 34.23	4-18 years; mean 7.25
4	Bi et al. (2022)	Cross-sectional (part of mixed methods study)	China	Mothers of children with ASD	64 mothers	< 35 - >41	Mean 102.48 months
5	Chen et al. (2021)	Cross-sectional	China	Parents of children with ASD	439 parents (119 male; 320 female)	Mean 40.17	Mean 11.13 years
6	Chen et al. (2022)	Cross-sectional	China	Mothers of children with ASD	263 mothers	24-48; mean 35.56	2-15 years; mean 5.64 years
7	Chu et al. (2020)	Cross-sectional	Malaysia	Parents of children with ASD	110 parents (30 male; 80 female)	21 - >50	N/A
8	Dardas et al. (2015)	Cross-sectional	Jordan	Parents of children with ASD	184 parents (70 male; 114 female)	21-60; mean 37 (standard deviation, SD = 7.6 years)	2-12 years; mean 6.3 years
9	Gabra et al. (2021)	Cross-sectional	Egypt	Parents of children with ASD	70 parents (30 male; 40 female)	30-41; mean 35.32	5-12 years; Mean 8.21 years
10	Ismail et al. (2022)	Cross-sectional	Malaysia	Parents of children with ASD	260 parents (119 male; 141 female)	24-65; mean 37.9	Mean 7.9 years
11	Jose et al. (2021)	Cross-sectional	India	Mothers of children with ASD	99 mothers	18 - >35	1-18 years
12	Khusaifan and Keshky (2021)	Cross-sectional	Saudi Arabia	Parents of children with ASD	131 parents (59 male; 72 female)	<24 – 49	<5 - >15
13	Li et al. (2022)	Cross-sectional	China	Mothers of children with ASD	185 mothers	Mean 34.02	Mean 4.04 years
14	Lu et al. (2015)	Cross-sectional	China	Parents of children with ASD	118 parents (51 male; 67 female)	Mean 3.75 ± 3.50	5-12 years
15	Lu et al. (2018)	Cross-sectional	China	Parents of children with ASD	479 parents (202 male; 277 female)	26-45; mean 36.59	3-18 years; mean 6.68
16	Lu et al. (2021)	Cross-sectional	China	Parents of children with ASD	306 parents (46 male; 258 female)	Mean 40 (standard deviation ± 7.33)	Mean 10.56 years ± 5.63
17	Ran et al. (2023)	Cross-sectional	China	Caregivers of children with ASD	6120 caregivers (3905 male; 2215 female)	N/A	N/A

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18	Singh et al. (2017)	Cross-sectional (part of mixed methods study)	India	Mothers of children with ASD	70 mothers	Mean 35.30	4-15 years; mean 8.01 years
19	Vahedparast et al. (2022)	Cross-sectional	Iran	Parents of children with ASD	192 parents (96 male; 96 female)	Mean 48.48 (mothers)	Mean 10.4 years
						Mean 53.31 (fathers)	
20	Wang et al. (2020)	Cross-sectional	China	Parents of children with ASD	420 parents (210 male; 210 female)	Mean 38.81 (mothers)	Mean 10.09 years
						Mean 41.14 (fathers)	
21	Wang et al. (2022)	Cross-sectional	China	Parents of children with ASD	79 parents (19 male; 60 female)	Mean 36.24	3-13 years
22	Wang et al. (2013)	Cross-sectional	China	Mothers of children with ASD	150 mothers	Mean 32.39	Mean 5.15 years
23	Werner & Shulman (2013)	Cross-sectional	Israel	Parents of children with ASD (part of sample of children with developmental disabilities)	Parents of 56 children	N/A	N/A
24	Yan et al. (2022)	Cross-sectional	China	Parents of children with ASD	245 parents (58 male; 187 female)	27-53; mean 34.7	5-12 years
25	Zeng et al. (2020)	Cross-sectional	China	Parents of children with ASD	226 parents	Mean 39 years	7-12 years; Mean 10.3 years
26	Zeng et al. (2021)	Cross-sectional	China	Parents of children with ASD	438 (219 male; 219 female)	Mean 39.3 (mothers)	7-12 years; mean 10.3 years
						Mean 42.0 (fathers)	

Characteristics of the Research Included

The general characteristics of the research studies extracted are in Table 2. All studies utilized a cross-sectional design, with three studies reporting quantitative cross-sectional data as part of mixed methods designs (Alshaban et al. 2024; Bi et al. 2022; Singh et al. 2017). 15 of the studies were conducted in China, seven studies were conducted in West Asia: two studies in Saudi Arabia and five studies conducted in Qatar, Jordan, Iran, Egypt and Israel respectively. Two studies were each conducted in Malaysia and India respectively. The sample population was made up of either mothers only or parents of children with autism spectrum disorder. A total of approximately 11273 participants make up the sample of all included studies, although there is a possibility the number is an overestimate due to ambiguous reporting on whether there exists an overlap in study samples (Zeng et al. 2020; Zeng et al. 2021). Besides that, one study was unclear in reporting the number of PCA included as they were

recruited as part of a broader sample of parents of children with developmental disabilities (Werner & Shulman 2013). The study only specified the quantity of children with autism spectrum disorder.

Measures of parenting stress

Twenty studies reported a measure of parenting stress, with the most commonly used - 12 studies - measure being the Parenting Stress-Index Short Form (Abidin et al. 2006). The rest of the studies utilized the parenting stress index (Vahedparast et al. 2022), the family stress and coping interview-adapted scale (Khusaifan & El Keshky 2021), the vernacular version of the parental stress scale (Jose et al. 2021), the Zarit burden scale (Singh et al. 2017), the caregiver burden inventory (Chu et al. 2020) and the Zarit burden interview (Gabra et al. 2021). Alshaban et al. (2024) developed their own questionnaire using the Autism Parenting Stress Index (Silva & Schalock 2012) with one question aiming to measure parenting stress.

An overview of all measures used throughout the studies is included in Table 3.

Table 3. Overview of measures utilized in included studies

No.	Study	Measure of parenting stress	Measure of social support	Measure of Quality of Life
1	Alhuzimi (2021)	Parenting Stress Index Short Form	Survey questionnaire (adapted from Colizzi et al. 2020)	N/A
2	Alshaban et al. (2024)	One survey question developed from The Autism Parenting Stress Index (APSI)	Survey questions (unclear details)	6 survey questions developed from the World Health Organizations Quality of Life Questionnaire with Parents of Children with Autistic Disorder
3	Ban et al. (2021)	N/A	Inventory of Social Support Behavior	The Brief Subjective Well-Being Scale for Chinese Citizen
4	Bi et al. (2022)	N/A	Revised Social Provisions Scale for Autism	Index of Wellbeing, Index of General affect
			Survey questionnaires assessing network size and degree of intimacy of social support network respectively	
5	Chen et al. (2021)	Parenting Stress Index Short Form	Perceived Social Support Questionnaire	N/A
6	Chen et al. (2022)	Parenting Stress Index Short Form	Family Interaction Scale in the Family Life Quality Scale	N/A
7	Chu et al. (2020)	The Caregiver Burden Inventory	N/A	The CarerQOL
8	Dardas et al. (2015)	Parenting Stress Index Short Form	N/A	The World Health Organization Quality of Life Assessment–Brief
9	Gabra et al. (2021)	Zarit Burden Interview	N/A	World Health Organization Quality of Life–BREF (WHOQOL-BREF)
10	Ismail et al. (2022)	N/A	Multidimensional Scale of Perceived Social Support	The Quality of Life in Autism Questionnaire
11	Jose et al. (2021)	Parental Stress Scale – vernacular version	Participant reported role of spouse along with level of engagement in the care of autistic child and accompanying the child for therapeutic sessions.	N/A
12	Khusaifan and Keshky (2021)	Family Stress and Coping Interview- Adapted Scale	Multidimensional Scale of Perceived Social Support	Satisfaction with Life Scale
13	Li et al. (2022)	Parenting Stress Index Short Form	Multidimensional Scale of Perceived Social Support	N/A
14	Lu et al. (2015)	N/A	Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988)	Satisfaction with Life Scale, SWLS (Diener et al. (1985))
15	Lu et al. (2018)	Parenting Stress Index Short Form	Multidimensional Scale of Perceived Social Support	Satisfaction with Life Scale

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16	Lu et al. (2021)	N/A	Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988)	Satisfaction with Life Scale, SWLS (Diener et al. (1985))
17	Ran et al. (2023)	N/A	Online survey questionnaire assessing formal and informal social support	Medical Study Short-Form Health Survey version 2
18	Singh et al. (2017)	Zarit Burden Scale	Multidimensional Scale of Perceived Social Support	N/A
19	Vahedparast et al. (2022)	Parenting Stress Index	N/A	World Health Organization Quality of Life Scale
20	Wang et al. (2020)	Parenting Stress Inventory-Short Form	N/A	Beach Center Family Quality of Life Scale
21	Wang et al. (2022)	Parenting Stress Inventory-Short Form	N/A	Beach Center Family Quality of Life Scale
22	Wang et al. (2013)	Parenting Stress Index-Short Form	Multidimensional Scale of Perceived Social Support	N/A
23	Werner & Shulman (2013)	Single item (“To what degree do you feel burdened when you are with your child with a disability”) rated from 1 = never to 5 = almost always.	Unnamed social support scale developed in Israel by Auslander, Soskolne, and Ben-Shahar (2005).	Personal Well-being Index (International Wellbeing Group, 2006)
24	Yan et al. (2022)	Parenting Stress Index-Short Form	Multidimensional Scale of Perceived Social Support	N/A
25	Zeng et al. (2020)	Parenting Stress Inventory-Short Form	Family Support Scale	Beach Center Family Quality of Life Scale
26	Zeng et al. (2021)	Parenting Stress Inventory-Short Form	Family Support Scale	Beach Center Family Quality of Life Scale

Measures of social support

Twenty studies reported a measure of either formal or informal social support from various sources. Seven studies utilized the Multidimensional Scale of Perceived Social Support while five studies utilized self-developed survey questionnaire items to assess aspects of social support, including the quantity, frequency, or details regarding network size and level of engagement (Alhuzimi 2021; Bi et al. 2022; Jose et al. 2021; Ran et al. 2023; Wang et al. 2013). Besides that, two studies utilized the family support scale (Zeng et al. 2020; Zeng et al. 2021). Other studies utilized the Revised Social Provisions Scale for Autism (Bi et al. 2022), Inventory of Social Support Behavior (Ban et al. 2021), Perceived Social Support Questionnaire (Chen et al. 2021), and the Family Interaction Scale in the Family Life Quality Scale (Chen et al. 2022). It might be worth noting that Bi et al. (2022) utilized

a combination of researcher-adapted questionnaire items and validated measures. Alshaban et al. (2024) measured social support using items that were part of a researcher-developed questionnaire measuring multiple variables. Werner and Shulman (2013) utilized an unnamed social support scale developed in Israel by Auslander et al. (2005).

Measures of quality of life

Eighteen studies reported a measure of quality of life. The most utilized measure was the Beach Center Family Quality of Life Scale, which was used in four studies (Wang et al. 2020; Wang, Wang, et al. 2022; Zeng et al. 2020; Zeng et al. 2021). The remaining studies used the Medical Study Short-Form Health Survey (Ran et al. 2023), the Brief Subjective Well-Being Scale for Chinese Citizen (Ban et al. 2021), Index of Wellbeing or Index of General Affect (Bi et al. 2022), The CarerQOL (Chu

et al. 2020), the World Health Organization Quality of Life Assessment–Brief (Dardas & Ahmad 2015; Gabra et al. 2021), the World Health Organization Quality of Life Scale (Vahedparast et al. 2022), the Quality of Life in Autism Questionnaire (Ismail et al. 2022), the 36-item Short Form Survey (Ji et al. 2014), the Personal Well-being Index (Werner & Shulman 2013), and the Satisfaction with Life Scale (Lu et al. 2018; Lu et al. 2021; Lu et al. 2015). Alshaban et al. (2024) used items from a researcher-

developed questionnaire adapted from the World Health Organizations Quality of Life Questionnaire with Parents of Children with Autistic Disorder (Skevington et al. 2004).

Associations between parenting stress, quality of life, and social support

An overview of the results reported by the studies is included in Table 4 (see Appendix B).

Table4 . Review synthesis

No.	Study	Variables of Interest	Statistical Analysis of Interest	Finding of interest
1	Alhuzimi (2021)	Parenting stress and social support	One-way MANOVA	Parental stress was significantly dependent on both frequency and usefulness of ASD support during the pandemic. ASD support explains 10.3% variance in parent's emotional well-being.
2	Alshaban et al. (2024)	Parenting stress and social support	Chi square and likelihood ratio tests	Parental stress was not significantly associated with support factors, such as access to treatment and social support as a short-term effect of COVID-19 pandemic lockdown.
3	Ban et al. (2021)	Social support and subjective well-being	Pearson correlation analyses Mediation analysis	Social support demonstrated a significant positive correlation with subjective well-being. Perceived discrimination partially mediates the relationship between social support and subjective well-being.
4	Bi et al. (2022)	Social support and subjective well-being	Correlation analysis Path analysis	A significant correlation was demonstrated between subjective wellbeing and perceived social support. Perceived social support was significantly correlated with effectiveness of overall social support and network size of social support. Effectiveness of social support is significantly associated with network size of social support and degree of intimacy of social support.
5	Chen et al. (2021)	Parenting stress and social support	Pearson correlation matrix Mediation and moderation analysis	The degree of intimacy of social support affects perceived social support through its influence on the effectiveness of social support and mother's subjective wellbeing. Meanwhile, the network size of social support affected mothers' subjective wellbeing through its influence on the effectiveness of social support and perceived social support. Parenting stress demonstrated a significant negative correlation with perceived social support.
6	Chen et al. (2022)	Parenting stress and social support	Pearson correlation analysis Moderation analysis	Perceived social support moderated the mediating effect of parenting stress on the relationship between parental self-efficacy and behavioral problems. A significant negative correlation was demonstrated between family interactions and parenting stress. Family interactions moderate the relationship between parenting efficacy and parental stress.

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7	Chu et al. (2020)	Parenting stress and quality of life	Pearson correlation analysis Ordinary least square regression analysis	A significant negative correlation was found between parenting stress and quality of life.
8	Dardas et al. (2015)	Parenting stress and quality of life	Mediation and moderation analysis	Accepting responsibility as a coping strategy mediated the relationship between stress and quality of life.
9	Gabra et al. (2021)	Parenting stress and quality of life	Multivariate linear regression model analysis	Seeking social support and escape avoidance as coping strategies moderated the relationship between stress and quality of life. Increased quality of life was less likely to increase the burden scale score.
10	Ismail et al. (2022)	Social support and quality of life	Path analysis	Those with increased total burden scale anxiety problems were more vulnerable to impaired quality of life (reduced total quality of life scores). Perceived social support substantially influences quality of life.
11	Jose et al. (2021)	Parenting stress and social support	Ordinal regression analysis	Parental coping strategies mediate the association between perceived social support and quality of life. Mothers were significantly more likely to fall into a higher category of stress if spousal support was low, with almost three times higher risk.
12	Khusaifan and Keshky (2021)	Parenting stress, social support, and quality of life	Multiple linear regression model Path analysis	Social support mediates the association between parenting stress and life satisfaction. Social support moderates the association between family stress and life satisfaction, for low to mid-levels of stress.
13	Li et al. (2022)	Parenting stress and social support	Pearson correlation analysis Multiple linear regression analysis Mediation analysis	A significant negative correlation was found between parenting stress and social support. Social support significantly predicted parenting stress. Social support did not moderate the effect of child social impairment on parenting stress.
14	Lu et al. (2015)	Social support and quality of life	Pearson correlations Stepwise regression analysis Hierarchical multiple regressions	Social support partially mediates the association between self-esteem and life satisfaction. Social support and self-esteem explain 18.6% variance in life satisfaction.
15	Lu et al. (2018)	Parenting stress, social support, and quality of life	Spearman correlation test Mediation analysis Hierarchical multiple regression analysis (moderation analysis)	A significant negative correlation was found between parenting stress and life satisfaction, and parenting stress and social support. A significant positive correlation was found between social support and life satisfaction. Social support mediated the association between parenting stress and life satisfaction. Parenting stress partially mediated the relationship between social support and life satisfaction. Social support significantly moderated the association between parenting stress and life satisfaction.

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16	Lu et al. (2021)	Social support and quality of life	Pearson correlation analysis Mediation and moderation analysis	Social support had a significant positive correlation with quality of life. Loneliness is reported to mediate and moderate the relationship between perceived social support and life satisfaction.
17	Ran et al. (2023)	Social support and quality of life	Logistic regression analysis	Caregivers who did not seek formal support from rehabilitation facilities were significantly 1.236 times at more risk of poor physical QOL than caregivers who accessed rehabilitation facilities.
18	Singh et al. (2017)	Parenting stress and social support	Pearson's product moment correlation Multiple regression analysis	Receiving welfare from the government, community, or organization did not have a statistically significant effect on caregivers' physical or mental QOL. Formal social support from rehabilitation institutions significantly influenced caregivers' QOL, accounting for demographic variables.
19	Vahedparast et al. (2022)	Parenting stress and quality of life	Pearson's correlation coefficient Path analysis	Support from significant others, family, and friends demonstrated a significant negative correlation with subjective burden. Perceived support from family directly moderates the association between subjective burden and depressive symptom. There was a statistically significant negative correlation between parenting stress and physical and mental QoL. Fathers' parenting stress had a significant negative correlation with maternal mental QOL.
20	Wang et al. (2020)	Parenting stress and quality of life	Correlation analysis Actor-Partner Interdependence Mediation Model analysis	Mental QOL mediated the relationship between parenting stress and mental and physical QOL in fathers and mothers. Mothers' and fathers' parenting stress was negatively correlated with their own and their partner's satisfaction with family interactions and emotional well-being. Fathers' perceived parenting stress was indirectly related to mothers' and their own satisfaction with family interactions through their own involvement.
21	Wang et al. (2022)	Parenting stress and quality of life	Correlation analysis Serial mediation model analysis	Fathers' parenting stress was related to mothers' and their emotional wellbeing through their own involvement. A significant negative correlation was found between parenting stress and parental family quality of life (FQOL). Parenting stress and mindful parenting serially mediated the association between parental mindfulness and FQOL.
22	Wang et al. (2013)	Parenting stress and social support	ANOVA analysis Hierarchical multiple linear regression	Significant associations between personal social support and maternal parenting stress (PSI-SF total score) were not found. Only governmental financial support was associated with overall parenting stress scores and explained 4.8% of the variance in parenting stress.

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23	Werner & Shulman (2013)	Parenting stress, social support, and quality of life	Pearson correlations Multivariate linear regressions	61.9% of subjective well-being was predicted by self-esteem, social support and positive meaning in caregiving.
24	Yan et al. (2022)	Parenting stress and social support	Correlation analysis	A significant negative correlation was found between parenting stress and social support.
			Structural Equation Modelling (Mediation analysis)	Parenting stress partially mediates the relationship between both family support and parental involvement.
			Hierarchical multiple regression analysis (Moderating analysis)	Parenting stress completely mediates the relationship between friend support and parental involvement.
25	Zeng et al. (2020)	Parenting stress, social support, and quality of life	Structural equation modelling	Family support had a direct effect on parental FQOL.
26	Zeng et al. (2021)	Parenting stress, social support, and quality of life	Correlation analysis Actor Partner Interdependence Model	There is a significant mediating effect of family support on parental stress and FQOL. A strong actor effect of family support on decreasing stress and improving FQOL for both mothers and fathers respectively. When considering fathers as the actor and mothers as the partner, fathers' FQOL are positively associated with fathers' perceived support and mothers' perceived support. When considering mothers as the actor and fathers as the partner, mothers' FQOL are positively associated with their own perceived support but negatively associated with fathers' perceived support.

Parenting stress and social support

Six studies demonstrated significant negative correlations between parenting stress and social support (Chen et al. 2021; Chen et al. 2022; Jose et al. 2021; Li et al. 2022; Lu et al. 2018; Yan et al. 2022). Similar associations were indicated for different support types, like family social support (Chen et al. 2022), spousal support (Jose et al. 2021), and government financial support (Wang et al. 2013). Li et al. (2022) also demonstrated through regression analysis that social support significantly predicted parenting stress. These associations were present during the COVID-19 pandemic (Alhuzimi 2021), albeit Alshaban et al. (2024) reported a non-significant association between parenting stress and social support, attributing it to reduced quality and availability of support during COVID-19 pandemic lockdown.

Seven studies reported social support as a potential mediator or moderator. Chen et al. (2021) reported social support as a moderator for the mediating effect of parenting stress on the association between parental self-efficacy and

behavioral problems. Chen et al. (2022) found evidence for family social support moderating the association between parenting efficacy and parental stress. Besides that, Yan et al. (2022) report that family social support moderated the association between parenting stress and parental involvement towards their child. They also suggest parenting stress being a mediator between social support and parental involvement, with a level of mediation dependent on support type. Singh et al. (2017) reported family support directly moderating the association between subjective burden and parental depressive symptoms.

Parenting stress and quality of life

Four studies reported a significant negative correlation between parenting stress and quality of life (Gabra et al. 2021; Lu et al. 2018; Vahedparast et al. 2022; Wang, Wang, et al. 2022). Two studies also conducted dyadic analyses to examine actor and partner effects of mothers and fathers regarding their quality of life. Vahedparast et al. (2022) reported fathers' parenting stress being

significantly negatively correlated with maternal mental quality of life. Furthermore, another study reported both mothers' and fathers' parenting stress being negatively correlated with their own and their partners' quality of life (Wang et al. 2020). Wang et al. (2020) also reported that fathers' parenting stress was associated with mothers' parenting stress. Their family quality of life was mediated by the fathers' own involvement in their child's outcomes. Coping strategies were suggested as mediators or moderators of the association between parenting stress and quality of life. Accepting responsibility as a coping strategy was found to be a mediator while both seeking social support and escape avoidance as coping strategies was evidence to be a moderator (Dardas & Ahmad 2015). Parenting stress and mindful parenting were also reported to serially mediate the association between parental mindfulness and family quality of life (Wang, Wang, et al. 2022).

Social support and quality of life

Four studies reported significant positive correlations between social support and quality of life in parents of children with autism spectrum disorder (Ban et al. 2021; Bi et al. 2022; Ismail et al. 2022; Lu et al. 2018). An examination into source-specific support associations with quality of life reported that caregivers who did not seek formal support from rehabilitation facilities had a significantly higher risk of having poor physical quality of life, with 1.24 times the risk (Ran et al. 2023). This association was significant, accounting for demographic variables. In contrast, Ran et al. (2023) also reported that receiving social support from the government, the community, or organizations did not have a statistically significant effect on caregivers' physical or mental quality of life. Bi et al. (2022) also reports that social support is significantly correlated with the perceived effectiveness of social support and network size of social support. Furthermore, they propose that based on evidence, the effectiveness of social support is significantly associated not only with the network size of social support but also with

the degree of intimacy of social support. Bi et al. (2022) propose that the degree of intimacy of social support influences perceived social support through its influence on the association between social support and quality of life. Furthermore, the network size of social support is proposed to affect quality of life through its influence on the association between effectiveness of social support and perceived social support. Both family cohesion and adaptability, and parental coping strategies were suggested to mediate the association between social support and quality of life (Ismail et al. 2022). Ban et al. (2021) reported that perceived discrimination partially mediates the association between social support and quality of life. Lu et al. (2015) reported evidence supporting social support as a partial mediator of the association between self-esteem and life satisfaction in PCA, with both social support and self-esteem explaining 18.6% variance in life satisfaction. This echoes Werner and Shulman's (2013) study where it was reported that 61.9% of subjective well-being was predicted by self-esteem, social support, and positive meaning in caregiving.

Parenting stress, social support, and quality of life

Four studies reported simultaneous measures of parenting stress, social support, and quality of life (Khusaifan & El Keshky 2021; Lu et al. 2018; Zeng et al. 2020; Zeng et al. 2021). Khusaifan and El Keshky (2021) suggest that social support both mediates and moderates the association between parenting stress and quality of life, with the moderating effect being evident specifically for caregivers with low to mid-levels of stress. This sentiment is echoed by Lu et al. (2018), who suggest that parenting stress also partially mediates the association between social support and quality of life. Zeng et al. (2020) report that family support has a direct effect on parental quality of life and provides support for social support as a mediator with family support significantly mediating the association between family support and quality of life.

Table 5. Quality Appraisal Table

No.	Items	Sample inclusion criteria	Study subjects and settings	Measurement of exposure	Measurement of condition	Confounding factors	Strategies to deal with confounders	Measurement of outcomes	Statistical analysis	Overall Appraisal
1	Alhuzimi (2021)	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Included
2	Alshaban et al. (2024)	Yes	Yes	Unclear	Yes	Yes	Yes	Unclear	Yes	Included
3	Ban et al. (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
4	Bi et al. (2022)	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Included
5	Chen et al. (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included

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6	Chen et al. (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
7	Chu et al. (2020)	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Included
8	Dardas et al. (2015)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
9	Gabra et al. (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
10	Ismail et al. (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
11	Jose et al. (2021)	Yes	Unclear	Yes	Yes	Yes	Yes	Unclear	Yes	Included
12	Khusaifan and Keshky (2021)	Yes	Yes	Yes	Unclear	Yes	Unclear	Yes	Yes	Included
13	Li et al. (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
14	Lu et al. (2015)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
15	Lu et al. (2018)	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Included
16	Lu et al. (2021)	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Included
17	Ran et al. (2023)	Yes	Unclear	Unclear	Yes	Yes	Yes	Yes	Yes	Included
18	Singh et al. (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
19	Vahedparast et al. (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
20	Wang et al. (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
21	Wang et al. (2022)	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Included
22	Wang et al. (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
23	Werner (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Included
24	Yan et al. (2022)	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Included
25	Zeng et al. (2020)	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Included
26	Zeng et al. (2021)	Yes	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	Included

DISCUSSION

This review examined the associations between parenting stress, social support, and QOL in parents of children with autism spectrum disorder across Asia. The findings consistently highlight significant associations among these three variables, with social support emerging as a protective factor against the negative impacts of parenting stress. Across the 26 studies included in this review, evidence was found that social support is negatively associated to parenting stress, with higher levels of support leading to reduced stress and improved QOL.

Furthermore, parenting stress was negatively correlated with QOL across multiple studies, emphasizing the role of stress that negatively affects overall well-being (Gabra et al. 2021; Vahedparast et al. 2022).

A key observation from this review is the nature of the associations between parenting stress, social support, and QOL, with some studies

indicating that social support may act as both a mediator and moderator in these associations. It was also suggested that parenting stress mediates the relationship between social support and QOL. These findings support the Caregiving Burden and Care Process Model, which posits that caregiving stress, social support, and QOL are interrelated constructs, with coping strategies and other psychological factors also influencing these associations (Raina et al., 2004). More studies on the moderating and mediating roles between these variables could provide more insight into the construct of caring for a child with autism spectrum disorder in Asia.

However, despite the broad consensus on the importance of social support, the studies included in this review exhibit heterogeneity in terms of geographical location and measures used for the constructs. This variation may limit the generalizability of the findings across different Asian contexts. Cultural values and attitudes or location-specific resources may influence parenting

stress and the availability or type of social support. This suggests that more research across a broader range of Asian countries would provide a more comprehensive understanding of these relationships. Notably, many of the studies were based in China, which may not fully capture the unique challenges faced by parents in other parts of Asia. The caregiving experience of parents across countries with varying social support systems may differ significantly. Indeed, there are documented geographical differences between Asian communities in South Asia, Southeast Asia, and East Asia. For example, there are differences in family dynamics and socioeconomic landscape within these Asian regions due to factors like economic growth and cultural diversity (Quah 2003; Yeung et al. 2018). These differences may contribute to environment factors affecting the experience and wellbeing of families raising children with ASD across Asia (Martinez & Turnage 2022). Therefore, evidence base for caregiving experience of PCA in Asia could be expanded to provide more comprehensive overview of all Asian countries, including but not limited to East Asian, South Asian, and South-East Asian countries.

It may also be noted that some studies seem to both examine the construct of quality of life through individual parental well-being and overall family well-being. Considering the topic scope, it may be useful to examine how perceptions regarding family well-being or familial values would influence reported quality of life. Besides that, while the studies reviewed consistently found significant associations, the varying measures and study designs employed across the studies may also introduce confounding factors that contribute to the heterogeneity of results across the studies. The difference in measures of social support and QOL, for example, could impact the comparability of results. Therefore, future research could expand the geographical scope of studies to enhance the robustness and applicability of findings. Moreover, longitudinal studies exploring causal relationships between these variables would provide deeper insights into how social support and parenting stress influence QOL over time.

CONCLUSION

Overall, the available evidence base provides support for the interrelations between social support, parenting stress, and quality of life in parents of children with autism spectrum disorder in Asia. There is heterogeneity in the nature of the associations but there appears to be a consensus for social support, parenting stress, and quality of life to be significantly associated with each other directly and indirectly. They are also suggested to

be related with and through other variables like coping strategies and self-efficacy in line with the Caregiver Burden and Care Process Model. Future studies might benefit from more studies on the associations between these variables in a wider scope of Asian countries since the studies in this review mostly originate from China. While the cultural context lends itself to applicability of results across populations, a wider scope could enrich the cultural context of the studies thus providing a more holistic understanding on the caregiving experience of children with autism spectrum disorder in Asia.

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