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RESEARCH ARTICLE

A Linguistic Perspective on Pragmatic Comprehension in Children with Autism Spectrum Disorder: A Narrative Review

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ABSTRACT

Pragmatic comprehension, or the ability to interpret context-dependent meaning, is identified to be an area of difficulty for children with autism spectrum disorder (ASD). Although a substantial body of research has explored this area, most studies have focused monolingual children, and their relevance to multilingual settings such as Malaysia remains unclear. This narrative review synthesises international research on pragmatic comprehension in children with ASD from a linguistic perspective and considers its implications for Malaysia. A structured search of Scopus and Web of Science, supplemented by Google Scholar, identified 17 studies published between 2015 and 2025, together with foundational studies. These studies were synthesised thematically across three areas: the nature of pragmatic comprehension difficulties, the cognitive mechanisms underlying these difficulties, and the role of language and cultural context. Findings suggest that difficulties become more apparent as inferencing and spontaneous reasoning demands rise. As such, pragmatic comprehension does not reflect an absolute deficit but appears to be selective and context-dependent, often reflecting a gap between understanding meaning and being able to use or explain it appropriately. Theory of mind (ToM) emerged as the most consistent contributing factor, while structural language and general cognitive ability played supporting and, at times, compensatory roles. While similar patterns were observed across languages, evidence from multilingual settings was rather scarce, and pragmatic comprehension in children with ASD in Malaysia remains largely unexamined. These findings highlight the need for research grounded in Malaysia's multilingual context.

Contribution/Originality: This narrative review provides a linguistically focused account of pragmatic comprehension in children with ASD, with particular relevance to the Malaysian context. In doing so, it underscores gaps in multilingual and Malaysian research that should be addressed in future studies.

1. Introduction

Language is an important conduit through which people communicate with one another. However, successful communication involves more than just the ability to produce and interpret grammatically correct utterances. This is largely due to the nature of language itself, as meanings are often conveyed implicitly rather than explicitly stated. As such, interpreting these meanings requires listeners to draw on contextual cues and shared knowledge, a pragmatic ability that is essential for everyday social interaction.

Pragmatic comprehension has been identified as a particularly challenging aspect of language for children with autism spectrum disorder (ASD). Even with solid structural language competencies, many children with ASD find it challenging to interpret context-dependent meanings, including implicit and figurative language. These difficulties are widely recognised as a core feature of the communicative challenges associated with ASD (Cardillo et al., 2021; Loukusa et al., 2018), which can affect their participation in both social and educational settings. Therefore, examining pragmatic comprehension is essential for informing better support strategies for children with ASD across these contexts.

A growing body of international research has investigated pragmatic comprehension in children with ASD, focusing on their understanding of implicature, figurative language, and conversational maxims, as well as the cognitive factors underlying these abilities (Asada et al., 2022; Cardillo et al., 2021; Loukusa et al., 2018; Mazzaggio et al., 2021; Pastor-Cerezuela et al., 2018). Findings consistently show that children with ASD experience pragmatic difficulties that are linked to cognitive factors, notably ToM, the ability to attribute mental states to oneself and others (Baron-Cohen et al., 1985). However, most of this evidence is based on studies involving monolingual children (Gilhuber et al., 2023).

This foregrounds a critical gap in the existing literature, as pragmatic comprehension is closely linked to language and culture. The ways in which meaning is expressed and interpreted vary across languages and communicative norms, raising questions about the extent to which findings from one linguistic context can be generalised to others (Kato et al., 2022). Although this area has been examined across a range of languages, relatively little is known about how pragmatic comprehension develops in bilingual and multilingual children with ASD (Gilhuber et al., 2023). Consequently, it remains unclear whether the patterns of difficulty identified in monolingual children with ASD are also evident among those who use more than one language in their daily lives.

Malaysia is a good example of such multilingual setting, where children with ASD are typically educated in either Malay or English while also being exposed to their own mother tongues at home. Despite this, pragmatic comprehension in children with ASD remains largely underexplored. Existing Malaysian research has primarily focused on interventions (Fauzan & Mahayuddin, 2014), pedagogical strategies (Omar et al., 2013; Yahya et al., 2013), the psychological burden experienced by parents of children with ASD (Ting & Chuah, 2010), and perspectives on the social communication difficulties faced by youths with ASD (Abdul Samad et al., 2025). As such, studies that directly examine the comprehension of context-dependent meaning are rather scarce, with linguistically grounded assessment only recently beginning to emerge (Niveethene, in press; Rahman & Majid, 2022). Thus, current understanding of the pragmatic language

abilities of children with ASD relies almost entirely on evidence from other linguistic and cultural contexts, the applicability of which has yet to be established.

This narrative review addresses this gap by drawing on international research on pragmatic comprehension in children with ASD from a linguistic perspective. Notably, it aims to understand what is currently known about these abilities and the factors that shape them, while identifying what remains to be explored for English-speaking and multilingual children in Malaysia. The review is guided by the following research questions:

RQ1: What does the existing international literature reveal about the pragmatic comprehension abilities of children with ASD, and what linguistic and cognitive factors shape these abilities?

RQ2: To what extent has pragmatic comprehension in children with ASD been examined in the Malaysian context, and what gaps remain for English-speaking children?

2. Methodology

2.1. Review design and data sources

This paper adopts a narrative review approach to examine existing studies on pragmatic comprehension in children with ASD. In contract to systematic reviews that provide an exhaustive and protocol-driven synthesis of all available studies, a narrative review focuses on selecting and integrating literature most relevant to the research questions (Dörnyei, 2007). To enhance rigour while limiting selection bias and ensuring transparency in the screening and extraction processes, a structured search strategy was used. The literature search was conducted in June 2026 using two main indexed databases, Scopus and Web of Science (WoS), chosen for their vast multidisciplinary coverage across linguistics, psychology, education and health sciences, among others. Additionally, Google Scholar was used as a supplementary source to locate potential regional and grey literature, particularly those situated within the Malaysian and broader Southeast Asian context that may not be fully captured in the two databases.

2.2. Search strategy

To identify relevant research articles, a three-layer search strategy was formulated, reflecting the funnel structure of the review, progressing from international studies to those situated within the regional context. The first layer was designed to systematically capture papers addressing the core focus of the review, namely pragmatic comprehension in children with ASD. This search combined terms related to ASD, and the target population (i.e., children and adolescents). More importantly, to ensure that the retrieved studies were primarily focused on pragmatic comprehension rather than merely citing the concept in passing, the pragmatic terms were restricted to the title field, while the ASD and population terms were searched across the title, abstract, and keywords. In Scopus, the search string for this layer was expressed as follows:

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TITLE("pragmatic*" OR "implicature" OR "figurative language" OR "non-literal") AND TITLE-ABS-KEY(("autism" OR "ASD" OR "autism spectrum" OR "Asperger") AND ("child*" OR "adolescen*"))
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For the second layer, additional terms were added to better capture studies on multilingualism and cross-linguistic comparisons ("bilingual" OR "multilingual" OR "second language" OR "cross-linguistic" OR "cross-cultural"), while terms related to the regional context ("Malaysia*" OR "Southeast Asia*") were added for the third layer. Likewise, similar search strings were employed in WoS using field tags (i.e., TI and TS). The initial searches across both databases returned an unmanageable number of documents, therefore, terms “context” and “inference” were subsequently deleted from the search string, given the large volume of studies that applied the words incidentally rather than in direct reference to pragmatic comprehension. Meanwhile, as Google Scholar does not support the same search string format, the supplementary search was conducted using more simplified search terms focusing on the regional context. Since the database was intended for supplementary sources to identify regional studies not indexed in the two primary databases, only the first few pages of results, ordered by relevance, were screened to locate eligible studies.

Searches conducted across the three databases were restricted to peer-reviewed journal articles and review papers published in English between 2015 and 2025. To further minimise sampling bias, no restrictions were imposed on the country of origin or the open-access status of the publications. Notably, two seminal works published before the search window were included as exceptions because they provide foundational frameworks that have informed later research and remain relevant to the field. Specifically, the studies by Loukusa et al. (2007a, 2007b) were included in the final corpus because they laid the groundwork for the context-utilisation findings reported in subsequent studies on pragmatic comprehension in children with ASD.

2.3. Inclusion and exclusion criteria

Five inclusion and five exclusion criteria were applied to guide the screening and selection of articles for the review corpus. Studies were included if they (a) were peer-reviewed journal articles or review papers; (b) involved participants aged 18 years or younger who had a clinical diagnosis of ASD or Asperger syndrome (high-functioning autism); (c) examined pragmatic comprehension or the use context-dependent information during interpretation; (d) directly assessed participants rather than relying solely on third-party reports; and (e) were published in English. Conversely, studies were excluded if they (a) involved only participants older than 18 years; (b) relied exclusively only parent- or teacher-reported observations or measures without direct assessment of the participants; (c) evaluated intervention outcomes without examining pragmatic comprehension; (d) focused exclusively on structural or grammatical aspects of language rather than pragmatic comprehension; or (e) consisted of abstracts, conference proceedings, theses, or book chapters.

2.4. Screening and selection

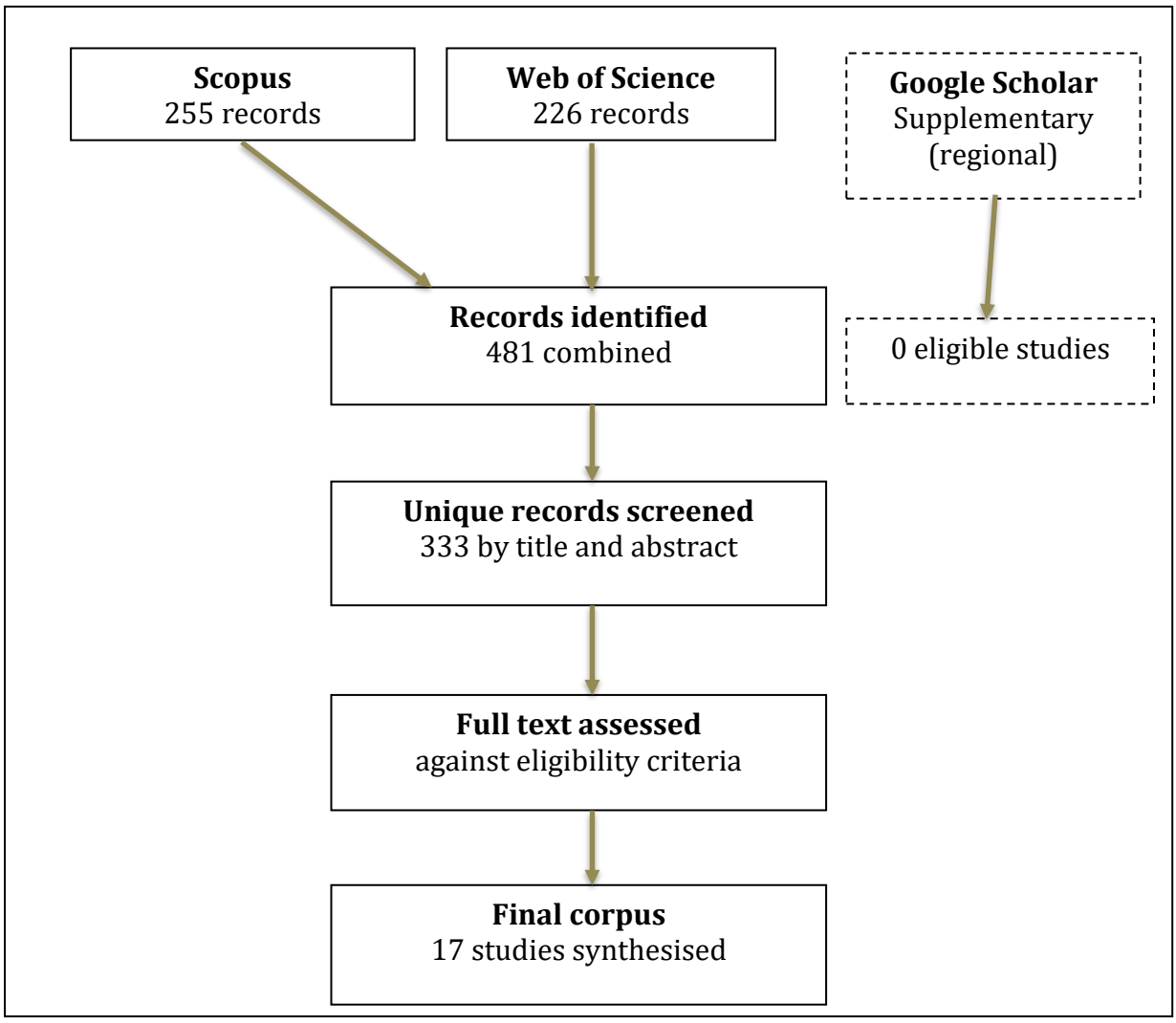
Table 1 shows the number of records obtained from the three-layer searches across the selected databases. The searches returned a total of 481 records (Scopus = 255; Web of Science = 226), with the regional layers across the two primary databases yielding only one record in Scopus (which was excluded as its participants were above 18 years old) and no records in WoS, thereby establishing the gap in the literature on pragmatic comprehension in children with ASD in the Malaysian and Southeast Asian context.

Table 1: Distribution of records retrieved across the three search layers

Database	Layer 1 (Core)	Layer 2 (Multilingual)	Layer 3 (Regional)	Total
Scopus	233	21	1	255
WoS	195	31	0	226
Total	428	52	1	481

Following document retrieval, duplicates were identified by cross-checking each document's title and digital object identifier (DOI) and were removed, leaving 333 unique records in the datasheet. The remaining documents were further screened by title and abstract against the previously identified inclusion and exclusion criteria identified earlier, and those that clearly did not meet the selection criteria were excluded from the review corpus. Subsequently, the remaining documents were examined in full text, resulting in a final corpus of 17 studies. These studies were then categorised thematically to facilitate synthesis. No additional eligible studies were retrieved from the supplementary data base, Google scholar, as no records contained the target terms in their titles. The screening and final shortlisting of the articles were conducted by the author, and the studies were examined and synthesised qualitatively rather than being subjected to meta-analysis. The detailed article selection process for this review is summarised in Figure 1.

Figure 1: Summary of the article selection process



2.5. Synthesis approach

The selected studies were synthesised thematically, with themes constructed inductively from recurring patterns across the corpus. Three themes were derived from the literature: (a) the nature of pragmatic comprehension difficulties; (b) the cognitive mechanisms underlying pragmatic comprehension; and (c) the role of language and cultural contexts, including the Malaysian gap. Given the multidimensional nature of several studies, findings from these studies were synthesised under all relevant themes rather than being assigned exclusively to a single category. A summary of the 17 studies reviewed is presented in Table 2.

Table 2: Summary of the 17 studies included in the review

Author(s), year	Country/ language	Sample	Domain	Key finding
Andreou et al., (2025)	Greece / Greek (mono- & bilingual)	ASD & TD, 4–12 yrs	Metaphor, simile	Bilingualism did not hinder comprehension; literal interpretation was the main error in both groups
Kritsotakis & Morfidi, 2025	Greece / Greek	ASD & TD, 9–12 yrs	Reading & figurative language	Weaker figurative comprehension; predicted by vocabulary and nonverbal ability
Petit et al., 2025	France / French	ASD & TD, 6–11 yrs	Implicature, metaphor	Poorer scalar implicature but intact metaphor comprehension, greater difficulty with spontaneous reasoning
Su & Jiang, 2024	China / Mandarin	ASD & TD, 4–8 yrs	Implicature	Fewer implicatures derived; number and ad-hoc performance linked to ToM
Asada et al., 2022	Japan / Japanese	ASD & TD, 5–9 yrs	Gricean maxims	Below TD but improved with age; redundancy and politeness maxims hardest
Mazzaggio et al., 2021	Italy / Italian	ASD & TD, 4–10 yrs	Implicature	Below TD on both implicature types; ToM predicted scalar but not ad-hoc
Cardillo et al., 2021	Italy / Italian	ASD & TD, 8–18 yrs	Nonliteral, inference	ToM, not executive function, was associated with pragmatic performance
Melogno et al., 2019	Italy / Italian	ASD & TD, 9–12 yrs	Idiom, metaphor	Idiom comprehension intact; metaphor explanation impaired
Loukusa et al., 2018	Finland / Finnish	ASD & TD, 5–10 yrs	Contextual inference	Widest gap on ToM-demanding items; difficulty explaining correct answers
Pastor-Cerezuela et al., 2018	Spain / Spanish	ASD & TD, 6–13 yrs	Implicature (GCI)	Below TD across all implicature types; no inferential continuum
Hochstein et al., 2018	USA / English	ASD & NT, 12–18 yrs	Scalar implicature	Computed scalar implicatures but failed spontaneous epistemic reasoning
Schaeken et	Belgium /	ASD & TD,	Implicature	All-or-nothing responding; TD

Author(s), year	Country/ language	Sample	Domain	Key finding
al., 2018	Flemish	~10 yrs		peers preferred a graded middle option
Tzuriel & Groman, 2017	Israel / Hebrew	HFA & TD, 5–11 yrs	Proverb, metaphor	Marked improvement after mediation
Huang et al., 2015	Taiwan / Mandarin	HFASD & TD, 7–12 yrs	Figurative language (5 types)	Below TD in all categories; vocabulary linked to metaphor only
Whyte & Nelson, 2015	USA / English	ASD & TD, 5–12 yrs	Pragmatic & nonliteral language development	Slower development; rate matched vocabulary and ToM
Loukusa et al., 2007a	Finland / Finnish	AS/HFA & TD, 7–12 yrs	Context use	Correct answers given but reasoning hard to explain
Loukusa et al., 2007b	Finland / Finnish	AS/HFA & TD, 7–12 yrs	Pragmatic errors	More errors across types; world-knowledge and topic drifts common

Note. ASD = autism spectrum disorder; TD = typically developing; ToM = theory of mind; HFA = high-functioning autism; HFASD = high-functioning autism spectrum disorder; NT = neurotypical; GCI = generalised conversational implicature.

3. Findings

3.1. The nature of pragmatic comprehension challenges

Based on the reviewed studies on pragmatic comprehension, children with ASD consistently demonstrated greater difficulties than their typically developing peers in deriving context-dependent meanings, particularly in tasks with higher inferential demands. In a seminal work, Loukusa et al. (2007a) revealed that children with ASD underperformed children without ASD when answering questions with complex contextual demands (e.g., implicature questions) that required them to integrate the provided information with their existing knowledge, compared to when answering questions that were contextually less demanding (e.g., reference assignment questions). Likewise, in another study, the group performed below their peers across all question types on a contextual inferencing task, with the widest gap occurring for questions that required reasoning about another person's mental state (Loukusa et al., 2018). It is therefore evident that the performance disparity between children with and without ASD typically increases relative to the demand for inferencing and intentionality required in utterance interpretation. A similar pattern was observed in tasks involving conversational implicatures, where children with ASD derived fewer scalar (e.g., interpreting "some" as "not all") and ad-hoc implicatures than non-autistic children (Mazzaggio et al., 2021; Su & Jiang, 2024) and demonstrated poorer performance across all three forms of generalised conversational implicature (Pastor-Cerezuela et al., 2018). Figurative language, including irony, metaphor, sarcasm, and indirect reproach, was also relatively challenging for the ASD group compared to the compared group (Huang et al., 2015), as was the understanding of Gricean conversational maxims, which the children appeared to still be in the early stages of developing (Asada et al., 2022). Taken together, the difficulties faced by children with ASD across these different pragmatic tasks suggest that the real challenge may lie in deficits in contextual processing itself, rather than in any single form of pragmatic task.

Notably, while it has been argued that children with ASD experience greater challenges as contextual demand increases, several studies suggest that the children possess the underlying ability to deal with pragmatic demands but fail to apply it when a task requires immediate inferential reasoning rather than guided, structured responding. For example, Melogno et al. (2019) found that children with ASD performed comparably with their typically developing peers on an idiom comprehension task using multiple-choice recognition, and differed from them only on the metaphor task, which required them to actively construct and explain the relationship between a concrete object and an abstract concept. Likewise, Hochstein et al. (2018) found no significant difference between adolescents with ASD and neurotypical adults in the computation of scalar and ignorance implicatures. However, despite being able to reason about a speaker's knowledge when explicitly prompted, adolescents with ASD had difficulty spontaneously incorporating this information when interpreting scalar implicatures. Similarly, Petit et al. (2025) revealed that children with ASD had more difficulty computing scalar implicatures than understanding metaphors, suggesting that the real challenge lies in the demand for spontaneous pragmatic inferencing rather than in pragmatic ability itself, as evidenced by their improved performance when the tasks were more scaffolded. The apparent inconsistencies across these findings imply that pragmatic comprehension is not an absolute core deficit in children and adolescents with ASD, but rather relates to variations in task demands, particularly how much each task requires spontaneous reasoning.

This is further supported by the observations made regarding the types of errors children with ASD produced. It has been reported that children with ASD have a recurring tendency to draw on their personal experiences or general knowledge rather than the contextual information available in the immediate situation when answering contextually demanding questions (Loukusa et al., 2007b). Relatedly, Schaeken et al. (2018) reported that when given the option to partly agree with an incomplete statement, children with ASD produced a binary response pattern (fully accept/fully reject) compared to their typically developing peers, who tended to choose the middle response, thus highlighting the former’s difficulty in processing incomplete information. In addition, Andreou et al. (2025) revealed that although bilingual children with ASD produced more accurate metaphors overall, most of their errors stemmed from literal interpretations, suggesting that this error pattern is a common feature of pragmatic deficits among children with ASD rather than something attributable to any single language.

More specifically, this tendency to make such errors may be explained by their difficulty in providing explanations for their correct answers. Loukusa et al. (2007a) highlighted children’s restricted awareness of their own thought processes, as they were unable to articulate how they arrived at correct responses. Subsequently, Loukusa et al. (2018) further underscored this reasoning gap, showing that children with ASD faced greater challenges in justifying their correct answers than typically developing children. Taken together, these findings foreground the fact that the pragmatic comprehension challenges faced by children with ASD are not necessarily a matter of pragmatic impairment itself but rather a consequence of the inconsistent and effortful deployment of this ability, especially in contextually demanding tasks that require immediate reasoning or explicit explanation. In essence, this situation highlights the role of the underlying cognitive processes involved in pragmatic comprehension.

3.2. Cognitive mechanisms underlying pragmatic comprehension

Several cognitive mechanisms underlying the pragmatic comprehension challenges experienced by children with ASD have been highlighted in the reviewed studies, with ToM emerging as a key factor. ToM, which refers to the ability to recognise and understand one's own and others' mental states (Baron-Cohen et al., 1985), has repeatedly been associated with the pragmatic performance of individuals with ASD. Notably, Cardillo et al. (2021), in a study involving a large sample of participants with ASD, reported that ToM, rather than executive functions, was the main factor mediating the relationship between group status and pragmatic language performance. Similarly, Su and Jiang (2024) found that young children's limited competence in deriving implicatures could be attributed to ToM deficits. Huang et al. (2015), in a study examining the comprehension of five types of figurative language, observed that ToM had a greater influence on the performance of children with ASD than on that of the non-ASD group, possibly because they rely more on intuitive reasoning when processing figurative language. In contrast, Mazzaggio et al. (2021) suggested that the role of ToM in pragmatic inferencing is more selective, as ToM reasoning skills influenced performance on scalar implicatures but not on ad hoc implicatures. These mixed findings suggest that, although ToM plays an important role in pragmatic inferencing, it does not fully explain the difficulties experienced by children with ASD across different pragmatic comprehension tasks.

Beyond ToM, several studies have highlighted the contribution of structural language and general cognitive abilities to pragmatic comprehension in children with ASD. Kritsotakis and Morfidi (2025) found that strong receptive vocabulary and nonverbal cognitive skills, such as analogical reasoning and abstract thinking, supported comprehension, particularly when making inferences and integrating prior knowledge. In contrast, their typically developing peers relied more on morphosyntactic and figurative language skills. Similarly, Huang et al. (2015) observed that receptive vocabulary played a particularly important role in metaphor comprehension compared to other forms of figurative language, supporting Norbury's (2005) argument that solid vocabulary promotes metaphor comprehension. Regarding developmental trajectories, Whyte and Nelson (2015) reported that although children with ASD exhibited a markedly slower rate of pragmatic and non-literal language development relative to their chronological age, their developmental trajectories were broadly aligned with their foundational linguistic skills. Collectively, these findings suggest that structural language skills do not merely coexist with pragmatic comprehension but may also support its development in children with ASD.

The role of executive functions (EFs), which involve the ability to independently initiate, regulate, and monitor cognitive processes without external prompting, appears to be more limited. Cardillo et al. (2021) found that EFs had minimal influence on pragmatic language performance once ToM was considered. This view is further supported by findings across studies showing that children with ASD were able to perform pragmatic tasks when provided with guidance but encountered difficulties when required to respond spontaneously and monitor their own reasoning (Hochstein et al., 2018; Petit et al., 2025). In other words, the issue does not appear to be an absence of pragmatic skills but rather difficulties in spontaneously deploying and regulating these skills, which is consistent with the competence-deployment gap discussed in the previous section.

Overall, pragmatic comprehension in children with ASD appears to be shaped by multiple interrelated factors rather than a single cognitive mechanism. Among the factors identified in the reviewed studies, ToM has the most prominent influence on pragmatic language performance, particularly in tasks requiring the interpretation of one's own and others' mental states, while structural language and broader cognitive abilities appear to provide additional support for pragmatic comprehension.

3.3. Language, culture, and the multilingual

Research on pragmatic comprehension among children and adolescents with ASD has been conducted across diverse linguistic and cultural settings, such as Finnish (Loukusa et al., 2007a, 2007b, 2018), Taiwanese (Huang et al., 2015), Hebrew (Tzuriel & Groman, 2017), Spanish (Pastor-Cerezuela et al., 2018), Flemish (Schaeken et al., 2018), Italian (Melogno et al., 2019; Cardillo et al., 2021; Mazzaggio et al., 2021), Japanese (Asada et al., 2022), Mandarin (Su & Jiang, 2024), French (Petit et al., 2025), and Greek (Andreou et al., 2025; Kritsotakis & Morfidi, 2025). Notably, the broadly similar patterns of difficulty reported across these studies suggest that pragmatic comprehension challenges are not exclusive to any particular language or its structure. Instead, these difficulties appear to stem from the contextual demands of interpreting meaning in social settings rather than from the structural aspects of language itself.

Most of the studies reviewed above have focused on monolingual children with ASD, while bilingual and multilingual populations remain underrepresented in the literature (Andreou, 2025). One pioneering study examining the comprehension and production of metaphors and similes in bilingual children with ASD found that they performed comparably to their monolingual peers in metaphor comprehension and outperformed them in metaphor production, possibly due to higher nonverbal intelligence. In essence, the study concluded that bilingualism did not pose an additional burden on the pragmatic language development of children with ASD. These findings are particularly relevant to multilingual settings (e.g., Malaysia), where children with ASD typically acquire more than one language.

However, in the context of Malaysia, studies examining the pragmatic challenges faced by children with ASD are rather limited (Rahman & Majid, 2022), despite the country's highly multilingual setting, where many children receive formal education in Malay or English while also being exposed to their respective mother tongues. In a single-case study involving a bilingual girl with High Functioning Autism (HFA), Rahman and Majid (2022) found that although she demonstrated proficiency in the structural aspects of language, she experienced challenges in social communication. These included difficulties in discourse management, such as starting, maintaining, and ending conversations with strangers, as well as difficulties understanding others' mental states, which often resulted in one-sided interactions. This study underscores the need to further explore the pragmatic challenges experienced by children with ASD, especially the high-functioning group with strong verbal abilities, as current understanding of English-speaking and bilingual or multilingual children with ASD continues to rely heavily on findings from other linguistic and cultural contexts.

Overall, the reviewed studies confirm that pragmatic comprehension difficulties in children with ASD have been widely investigated across different languages, whereas the Malaysian context remains essentially unexplored. This gap is particularly noteworthy considering that pragmatics has been broadly identified as one of the least

examined domains of language in multilingual children with ASD (Gilhuber et al., 2023). As such, there is a pressing need for research examining pragmatic comprehension among English-speaking and multilingual children with ASD in Malaysia.

4. Discussion

This review explored the literature on pragmatic comprehension in children with ASD, the underlying linguistic and cognitive factors that influence it, and the extent to which this area has been studied in the Malaysian context. Based on the reviewed studies, three main observations were made: the pragmatic challenges experienced by children with ASD, the mechanisms proposed to explain these phenomena, and the important gap in research involving multilingual Malaysian children with ASD.

First, a notable observation was that, despite variations across the reviewed studies in terms of language, the nature of the tasks and overall study design, the findings consistently pointed to a similar pattern. It became apparent that children with ASD experience greater challenges than their typically developing peers when performing tasks that place higher contextual and reasoning demands on them, a pattern observed across studies involving implicatures, figurative language and conversational maxims in different languages. Notably, although these children are often able to arrive at correct interpretations, they typically struggle to justify their reasoning without guidance. This gap between comprehension and the immediate application of that understanding implies that the challenges faced by this group are selective and context-dependent rather than indicative of a general deficit in pragmatic skills. As such, the focus should shift from examining whether children with ASD can use contextual information to understand meaning to identifying the circumstances under which they are able, or unable, to do so.

Second, there appears to be some general disagreement regarding the roles of specific cognitive mechanisms in the pragmatic performance of children with ASD. Although ToM has a pronounced influence on children's ability to infer others' mental states and intentions when drawing inferences, it does not fully account for performance across all pragmatic tasks. Meanwhile, structural language skills and general cognitive abilities have been highlighted as important supportive factors that facilitate pragmatic comprehension. Notably, the influence of executive function is debatable, with at least one study suggesting that this cognitive mechanism is not the sole determinant of pragmatic performance relative to ToM (Cardillo et al., 2021). Likewise, the evidence found across the different types of pragmatic comprehension study designs seems to be distinct in one way another. Despite the widespread assumption that figurative language is the most challenging area for children with ASD, this was challenged in one study that proved that scalar implicatures pose more difficulties for the group (Petit et al., 2025). This indicates that the findings of previous studies typically contradict each other, possibly due to differences in task requirements rather than differences in the group's abilities. In addition, the variations in how pragmatic comprehension is examined across studies (e.g., from scenario-based questions to verbal explanations to dynamic assessments) make it more challenging to draw direct comparisons across studies. In essence, although it is evident that children with ASD do experience pragmatic language deficits, the exact cognitive mechanisms responsible for these difficulties are difficult to identify with confidence given the inconsistencies in the findings. Therefore, future studies should strive for greater consistency in the definition and measurement of

pragmatic comprehension to strengthen the validity and reliability of assessment approaches and ensure that findings can be more readily compared across contexts.

Third, the broadly similar patterns of pragmatic difficulties observed among children with ASD across different languages suggest that these challenges are intrinsically related to the condition rather than to any specific language. However, most existing studies have focused on monolingual children with ASD, with only one study examining bilingual children. Its findings challenge the assumption that exposure to multiple languages imposes an additional burden and instead suggest that bilingualism may facilitate pragmatic language development among children with ASD (Andreou et al., 2025). This highlights the need to investigate multilingual contexts such as Malaysia, where many children with ASD are exposed to English alongside one or more additional languages. As research in such settings remains limited, the current understanding of the pragmatic language abilities of children with ASD continues to rely predominantly on evidence from other populations.

This gap in the literature underscores several directions for future research in the Malaysian context. Future studies may benefit from directly examining the pragmatic comprehension of multilingual children with ASD instead of relying on secondary sources or findings from other linguistic and cultural contexts, particularly to determine how exposure to additional languages influences the interpretation of meaning in English. These studies should also examine a broad range of pragmatic forms identified in previous studies, including implicatures, figurative language, and other aspects of pragmatic comprehension, to establish a clearer profile of the challenges faced by children with ASD in the local context. Furthermore, considering the evidence suggesting that children with ASD perform better on scaffolded tasks relative to those demanding immediate inferencing, future studies should clearly distinguish between guided and spontaneous assessment conditions, as each may present different sets of challenges. Assessment tasks should also be tailored to reflect the real communicative challenges children with ASD encounter in daily social interactions. In sum, these research directions would not only address a pivotal gap in Malaysian scholarship but also contribute to the broader understanding of pragmatic comprehension among multilingual children with ASD from a linguistic perspective.

5. Limitations of the review

This review has several limitations. Given the nature of this narrative reviews, it does not present an exhaustive list of studies in the area. Rather the studies included were carefully selected and synthesised in line with the research questions. To limit selection bias in identifying studies for inclusion, a structured and transparent search was undertaken across two primary research databases, shortlisting relevant studies. However, studies published in languages other than English, or those not indexed in the selected databases, may not have been included. Furthermore, the complete exclusion of non-English language publications from the review, while consistent with the review's aim, may have led to the omission of relevant regional studies. Lastly, the variations among the reviewed studies in terms of samples, test instruments, and frameworks, while offering useful insights, may have narrowed the scope for direct comparison. Notwithstanding these limitations, the review provides a contemporary overview of the available evidence in pragmatic comprehension among children with ASD and thereby underscores the clear need for research focused on multilingual and Malaysian contexts.

Ethics Approval and Consent to Participate

Not applicable.

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Conflict of Interest

The author declares there are no conflicts of interest.

References

Abdul Samad, F. D., Wan Ismail, W. S., Ahmad Basri, M. A. F., Chong, S. K., Mohd Tohit, N., Kamal Nor, N., Mohamad Aun, N. S., & Ahmad, M. N. (2025). Exploring social skills difficulties of youth with high functioning autism spectrum disorder (HFASD) in Malaysia: Comparison of perspectives from youth, parents and professionals. *International Journal of Developmental Disabilities, 71*. https://doi.org/10.1177/2192001X251325879

Andreou, M., Lampri, S., Marinis, T., & Peristeri, E. (2025). Bilingualism effects in metaphor and simile comprehension and production in children with autism spectrum disorder. *Autism Research, 18*(3), 632–647. https://doi.org/10.1002/aur.70009

Asada, K., Itakura, S., Okanda, M., Moriguchi, Y., Yokawa, K., Kumagaya, S., Konishi, K., & Konishi, Y. (2022). Understanding of the Gricean maxims in children with autism spectrum disorder: Implications for pragmatic language development. *Journal of Neurolinguistics, 63*, Article 101085. https://doi.org/10.1016/j.jneuroling.2022.101085

Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a "theory of mind"? *Cognition, 21*(1), 37–46. https://doi.org/10.1016/0010-0277(85)90022-8

Cardillo, R., Mammarella, I. C., Demurie, E., Giofrè, D., & Roeyers, H. (2021). Pragmatic language in children and adolescents with autism spectrum disorder: Do theory of mind and executive functions have a mediating role? *Autism Research, 14*(5), 932–945. https://doi.org/10.1002/aur.2423

Dörnyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies*. Oxford University Press.

Fauzan, N., & Mohd Mahayuddin, N. A. (2014). Brain training to improve sociability and behavior of autism spectrum disorder (ASD) children and young adults. *Procedia – Social and Behavioral Sciences, 143*, 308–314. https://doi.org/10.1016/j.sbspro.2014.07.410

Gilhuber, C. S., Raulston, T. J., & Galley, K. (2023). Language and communication skills in multilingual children on the autism spectrum: A systematic review. *Autism, 27*(6), 1516–1531. https://doi.org/10.1177/13623613221147780

Hochstein, L., Bale, A., & Barner, D. (2018). Scalar implicature in absence of epistemic reasoning? The case of autism spectrum disorder. *Language Learning and Development, 14*(3), 224–240. https://doi.org/10.1080/15475441.2017.1343670

Huang, S.-F., Oi, M., & Taguchi, A. (2015). Comprehension of figurative language in Taiwanese children with autism: The role of theory of mind and receptive

vocabulary. *Clinical Linguistics & Phonetics, 29*(8–10), 764–775. https://doi.org/10.3109/02699206.2015.1027833

Kato, S., Hanawa, K., Linh, V. P., Saito, M., Iimura, R., Inui, K., & Nakamura, K. (2022). Toward mapping pragmatic impairment of autism spectrum disorder individuals through the development of a corpus of spoken Japanese. *PLoS ONE, 17*(2), Article e0264204. https://doi.org/10.1371/journal.pone.0264204

Kritsotakis, G., & Morfidi, E. (2025). Reading comprehension challenges in autism spectrum disorder: Linguistic factors and figurative language proficiency. *Autism & Developmental Language Impairments, 10*, Article 23969415251371544. https://doi.org/10.1177/23969415251371544

Loukusa, S., Leinonen, E., Kuusikko, S., Jussila, K., Mattila, M.-L., Ryder, N., Ebeling, H., & Moilanen, I. (2007a). Use of context in pragmatic language comprehension by children with Asperger syndrome or high-functioning autism. *Journal of Autism and Developmental Disorders, 37*(6), 1049–1059. https://doi.org/10.1007/s10803-006-0247-2

Loukusa, S., Leinonen, E., Jussila, K., Mattila, M.-L., Ryder, N., Ebeling, H., & Moilanen, I. (2007b). Answering contextually demanding questions: Pragmatic errors produced by children with Asperger syndrome or high-functioning autism. *Journal of Communication Disorders, 40*(5), 357–381. https://doi.org/10.1016/j.jcomdis.2006.10.001

Loukusa, S., Mäkinen, L., Kuusikko-Gauffin, S., Ebeling, H., & Leinonen, E. (2018). Assessing social-pragmatic inferencing skills in children with autism spectrum disorder. *Journal of Communication Disorders, 73*, 91–105. https://doi.org/10.1016/j.jcomdis.2018.01.006

Mazzaggio, G., Foppolo, F., Job, R., & Surian, L. (2021). Ad-hoc and scalar implicatures in children with autism spectrum disorder. *Journal of Communication Disorders, 90*, Article 106089. https://doi.org/10.1016/j.jcomdis.2021.106089

Melogno, S., Pinto, M. A., Scalisi, T. G., Orsolini, M., Tarani, L., & Di Filippo, G. (2019). Reasoning on figurative language: A preliminary study on children with autism spectrum disorder and Klinefelter syndrome. *Brain Sciences, 9*(3), Article 58. https://doi.org/10.3390/brainsci9030058

Niveethene, M., & Raja Rozina, R. S. (2026). Pragmatic comprehension beyond language: An exploratory study of children with ASD in Malaysia. *Malaysian Journal of Social Sciences and Humanities (MJSSH), 11*(6), Article e004019. https://doi.org/10.47405/mjssh.v11i6.4019

Norbury, C. F. (2005). The relationship between theory of mind and metaphor: Evidence from children with language impairment and autistic spectrum disorder. *British Journal of Developmental Psychology, 23*(3), 383–399. https://doi.org/10.1348/026151005X26732

Omar, H., Hussin, Z., & Siraj, S. (2013). Teaching approach for autism students: A case in Malaysia. *Procedia – Social and Behavioral Sciences, 106*, 2552–2561. https://doi.org/10.1016/j.sbspro.2013.12.293

Pastor-Cerezuela, G., Tordera Yllescas, J. C., González-Sala, F., Montagut-Asunción, M., & Fernández-Andrés, M.-I. (2018). Comprehension of generalized conversational implicatures by children with and without autism spectrum disorder. *Frontiers in Psychology, 9*, Article 272. https://doi.org/10.3389/fpsyg.2018.00272

Petit, N., Geoffray Cassar, M.-M., & Baltazar, M. (2025). Some (but not all) pragmatic inferences are difficult for autistic children. *Journal of Autism and Developmental Disorders*. Advance online publication. https://doi.org/10.1007/s10803-025-06838-4

Rahman, S. B. A., & Majid, F. A. (2022). Identifying English language pragmatic deficits among children with autism: Lessons from Fatima's home. *Arab World English Journal, 13*(4), 427–442. https://doi.org/10.24093/awej/vol13no4.28

Su, Y. E., & Jiang, Y. (2024). Challenges with computing scalar and ad-hoc implicatures in Mandarin-speaking 4–8-year-old autistic children. *Journal of Communication Disorders, 110*, Article 106427. https://doi.org/10.1016/j.jcomdis.2024.106427

Ting, S. H., & Chuah, H. K. (2010). Parents' recognition of autistic behaviour and their coping strategies: A case study at Sarawak Autistic Association. *Malaysian Journal of Social Policy and Society, 7*, 52–65.

Tzuriel, D., & Groman, T. (2017). Dynamic assessment of figurative language of children in the autistic spectrum: The relation to some cognitive and language aspects. *Journal of Cognitive Education and Psychology, 16*(1), 38–63. https://doi.org/10.1891/1945-8959.16.1.38

Whyte, E. M., & Nelson, K. E. (2015). Trajectories of pragmatic and nonliteral language development in children with autism spectrum disorders. *Journal of Communication Disorders, 54*, 2–14. https://doi.org/10.1016/j.jcomdis.2015.01.001

Yahya, S., Md Yunus, M., & Hasnah, T. (2013). Instructional practices in enhancing sight vocabulary acquisition of ESL students with autism. *Procedia – Social and Behavioral Sciences, 93*, 266–270. https://doi.org/10.1016/j.sbspro.2013.09.187