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by MIT Id

Submission date: 01-Oct-2026 02:47PM (UTC+0700)
Submission ID: 3047326074
File name: 197_JAIELA_yaa.docx (7.51M)
Word count: 4467
Character count: 29576

Journal of Artificial Intelligence in English Language Teaching and Applied Linguistics
Volume X, Issue X, xx-xx.
e_ISSN: xxxx-xxxx
https://e-journal.gomit.id/index.php/jaiela/oai

AI-DRIVEN CONFIDENCE IN LANGUAGE LEARNING

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Article Info

Article history:

Received: Month XX, 20XX
Revised: Month XX, 20XX
Accepted: Month XX, 20XX
(Cambria 9)

Keywords:

Artificial Intelligence (AI);
English Speaking Skills;
Pre-University Students;
Learner Autonomy;
Educational Technology.

Abstract

Background: As English solidifies its role as a critical medium for global communication, addressing the gap between theoretical linguistic knowledge and practical oral proficiency has become increasingly urgent. The research aligns with the Malaysia Education Blueprint 2013–2025's emphasis on integrating ICT in education.
Aims: This paper explores how AI-powered applications, such as ChatGPT and ELSA Speak, can enhance the speaking skills and confidence of Malaysian pre-university students in English language learning.
Methods: A qualitative research design was employed with 10 students from Pahang Matriculation College. Over three weeks, students participated in bi-weekly speaking sessions, where they used AI assistance to prepare and present topics. Data collection involved recorded interviews and speaking activities, and progress was assessed using the Common European Framework of Reference for Languages (CEFR) speaking standards.
Result: The preliminary findings demonstrate consistent improvement in students' speaking proficiency and confidence. Most participants advanced at least one CEFR level. Furthermore, the study indicates that targeted support for less responsive students further enhanced the outcomes. The study highlights AI's potential to foster learner autonomy and provide personalized language practice, addressing common challenges faced by students in traditional speaking lessons.
Conclusion: This research contributes to both theory and practice by demonstrating practical applications of AI in language education. It informs educators on integrating technology to enhance communicative competence. The findings are particularly relevant to the conference strand on Educational Technology and Innovation, offering insights into leveraging AI to transform teaching and learning processes in diverse educational contexts.

To cite this article: Author. (202X). Title. *Journal of Artificial Intelligence in English Language Teaching and Applied Linguistics, X*(X), XX-XX.

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INTRODUCTION

English is widely recognized as a global language for education, employment, and communication. In Malaysia, however, many students continue to struggle with using English confidently in real-life situations. Despite years of formal instruction, there remains a persistent disconnect between students' theoretical grasp of the language and their practical, communicative application. Most have been taught English through traditional methods in school, where the focus was largely on grammar, vocabulary, and examination preparation. This leaves them with limited opportunities to develop oral skills through active practice. Outside the classroom, many students also find little support from their social circles, as family and friends tend to communicate in their first language rather than in English. This lack of immersive, real-world practice exacerbates speaking anxiety and stifles fluency development. When these students enter matriculation colleges, the emphasis shifts away from grammar instruction, yet the lack of authentic

opportunities for communication continues to hinder their oral proficiency. This creates a gap between their knowledge of English and their ability to use it effectively in everyday contexts.

Musa, Abdul Rahim, & Khamis, 2025stated that recent pedagogical shifts emphasize that integrating task-based language teaching (TBLT) can effectively simulate workplace and real-world communication, bridging this gap for technical and pre-university learners). This goes further when, researchers highlight that tapping into students' digital habits such as interacting with informal e-learning content on social media can significantly boost engagement and practical language application (Nawi, Khamis, Abdul Rahim, & Wan Abdullah, 2025). Recognizing these challenges, the Malaysia Education Blueprint 2013–2025 stresses the importance of using Information and Communication Technology (ICT) to enhance teaching and learning. With the rapid growth of Artificial Intelligence (AI), language classrooms now have new opportunities through Artificial Intelligence Language Learning (AILL). AI-powered applications such as ChatGPT and ELSA Speak can provide learners with personalized practice, instant feedback, and opportunities to rehearse speaking in safe and supportive environments. Unlike traditional classroom drills, these applications allow students to practice autonomously, helping them to build confidence and use the language more actively. By simulating conversational exchanges and providing non-judgmental corrections, AI tools mitigate the affective filters that typically impede language acquisition. The increased reliance of flipped learning frame works and gamified teaching environments to maximize technological advantage to structurally support autonomous ESL development (Ali et al., 2019; Yaccob et al., 2022).

Recent studies confirm AI's growing impact on every component of language learning. Yıldız (2024) demonstrated that integrating ChatGPT into EFL education enhances speaking self-efficacy by offering a low-stress, supportive environment for practice and feedback an approach closely aligned with this study's focus on Malaysian pre-university learners. Similarly, Kessler (2023) discussed how AI-driven language platforms such as Duolingo and other intelligent tutoring systems provide real-time, individualized feedback that supports communicative competence. The deployment of AI-enhanced smart classrooms has supported longitudinal development in L2 speaking accuracy, effectively capturing and correcting oral errors and all has been proven empirically (Liu, Hashim, & Sulaiman, 2026). Whereas, profound impacts on listening competencies and informal digital English learning has greatly been assisted by AI chatbots (Zhou, Hashim, & Sulaiman, 2025). Educators also benefit from this development where writing assessments are revolutionized, improving both efficiency and objective grading for ESL learners, all by advanced AI (Hj Khamis & Yusof, 2024), effectively acting as a digital "ESL guru" for struggling students (Sabudin, Hashim, & Yunus, 2023).

Complementing this, Intellectsoft (2025) highlighted how AI tools, through gamification and adaptive learning, improve oral skills and learner engagement. Broader evidence also shows that AI-powered speaking tools, including ChatGPT and ELSA Speak, promote authentic communication and track learner progress according to CEFR standards (MSI Publishers, 2025). Automated AI ratings are increasingly shaped by analytic complexity, accuracy, fluency, and pronunciation indices, mapping closely to holistic human evaluations In computer-based monologic speaking tests (Hu & Hashim, 2026). Furthermore, recent findings from the field of AI-assisted linguistics suggest that these technologies can improve speaking fluency, coherence, and pronunciation accuracy (Tandfonline, 2025). Naterkumar & Hashim, 2025; Zakaria, Hashim, & Jamaludin, 2025 stated that addressing individual ethical and cognitive needs in ESL instruction beyond basic fluency, adaptive AI tools also stimulate critical thinking and personalized learning pathways. Collectively, these studies underscore a paradigm shift in language pedagogy, where AI serves not merely as a supplemental resource, but as an active facilitator of personalized learning pathways.

Building on these insights, the present study explores how AI-powered applications can support Malaysian pre-university students in improving their English-speaking skills and confidence. Educators' readiness and perception of AI integration in particular is essential to ensure that these tools are utilized optimally (Nasrudin & Hashim, 2025; Zaidi, Hashim, & Sulaiman, 2026). Conducted with students at Pahang Matriculation College, this research investigates how AI-assisted speaking sessions can create meaningful opportunities for oral communication, foster learner autonomy, and reduce speaking anxiety. The study also seeks to determine the extent to which these applications influence students' affective, behavioral, and cognitive dimensions of

confidence, as well as their oral proficiency based on the Common European Framework of Reference for Languages (CEFR). Ultimately, the objective is to demonstrate how AI integration can bridge the gap between linguistic knowledge and communicative competence in the Malaysian pre-university context.

METHOD

Recognizing the nuanced nature of language acquisition, this study employs a qualitative research design to explore how AI-powered applications can support the development of English speaking proficiency and confidence among Malaysian pre-university students. In unpacking the complex perceptions of ESL learners in blended and digital learning environments, qualitative methods are highly effective (Lyu, Sulaiman, & Hashim, 2025; Shavkatovna, Hashim, & Jamaludin, 2024). Data collection methods include recorded speaking activities, semi-structured interviews, researcher observation notes, and a questionnaire based on Sanders' ABC Method. Recorded speaking activities provide substantive evidence of learners' verbal performance and progress over time. Semi-structured interviews allow for a deeper understanding of learners' perceptions, attitudes, and experiences with the AI tools. Researcher observation notes document contextual factors and behavioural nuances during speaking sessions, offering rich descriptive data. The Sanders' ABC Method (2009) questionnaire captures affective, behavioural, and cognitive responses related to learner engagement and motivation. This multi-method approach facilitates data triangulation, enhancing the validity and depth of the findings. The research design is particularly suited for examining complex, context-dependent phenomena like language learning and technology integration, enabling comprehensive insights into both observable skills and underlying learner experience, which aligns with broader investigations into how AI-assisted tools affect the professional identity and pedagogical strategies of ESL practitioners (Hu, Zhou, & Hashim, 2025; Zhu, Hussin, & Hashim, 2025). This qualitative framework supports the generation of meaningful, grounded interpretations that can inform effective language teaching practices and the integration of AI in educational settings.

Participants and Procedure

The participants were 10 students from Pahang Matriculation College selected using a purposive sampling technique, representing a range of English proficiency levels. These students were selected because they had completed their secondary education, where English was taught mainly through traditional methods, and were now in a learning environment where grammar instruction was no longer emphasized. The intervention was carried out over a period of three weeks, with two speaking sessions each week (six sessions in total). In each session, students used AI-powered language learning applications, specifically ChatGPT and ELSA Speak, to prepare and practice speaking tasks. Students were guided to use the apps for generating ideas, practicing pronunciation, and rehearsing short presentations. They then presented their responses in class, with peers and the lecturer providing additional feedback. This blended approach ensured that autonomous AI practice was effectively bridged with human-led collaborative reinforcement, a structural combination proven to elevate student autonomy and communicative capability (Zhou, Hashim, & Sulaiman, 2025b).

Data Collection and Assessment

Data were collected through several methods to capture students' progress and experiences:

- Recorded speaking activities: Students' oral performances were recorded across sessions to track improvement.
- Semi-structured interviews: Conducted with students to understand their perceptions, challenges, and confidence in using English with AI support.
- Researcher observation notes: Taken during sessions to document classroom interactions and student engagement.
- Questionnaire using Sanders' ABC Method: A structured questionnaire was adapted from Sanders' ABC framework to measure students' confidence in three dimensions: affective (feelings and attitudes toward speaking English), behavioral (participation and practice), and cognitive (beliefs

about their ability to improve). Responses were collected before and after the intervention to track changes in confidence.

Students' oral proficiency was assessed using the Common European Framework of Reference for Languages (CEFR) speaking standards. Baseline performance at the start of the intervention was compared with progress made by the end of the three weeks. The sequence of the intervention is presented in Figure 1, which provides a visual overview of the weekly activities, tools, and assessments, while Figure 2 shows the action research cycle.

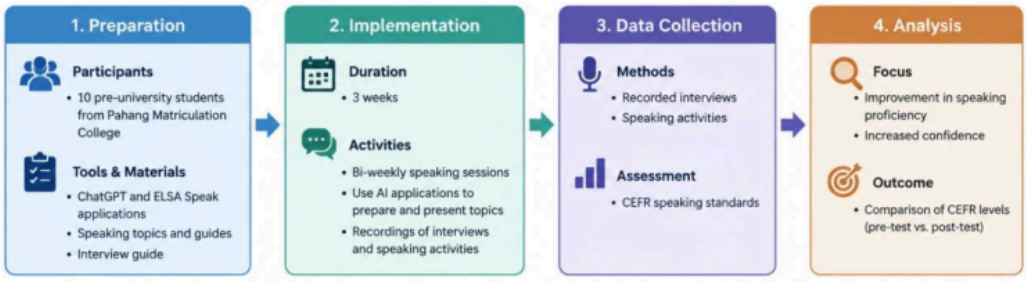


Figure 1. Research Design

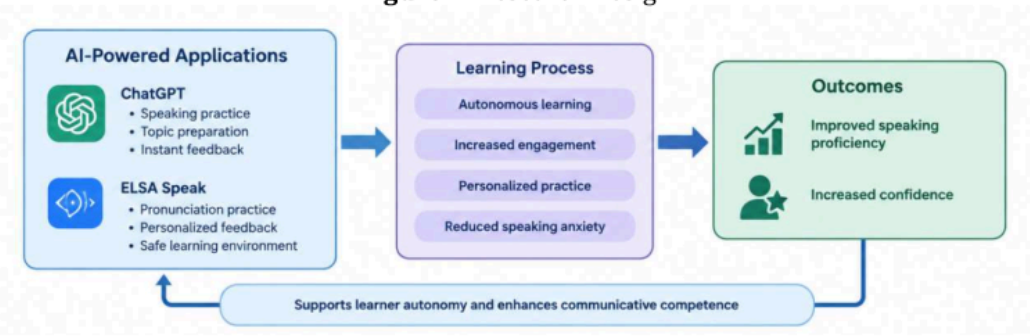


Figure 2. Conceptual Framework

RESULTS AND DISCUSSION

Results

Quantitative survey data supported the qualitative observations regarding student confidence. As shown in Figure 3, the overall average score across all items increased from 3.7 (Before) to 4.2 (After), reflecting a meaningful gain of +0.5 points.

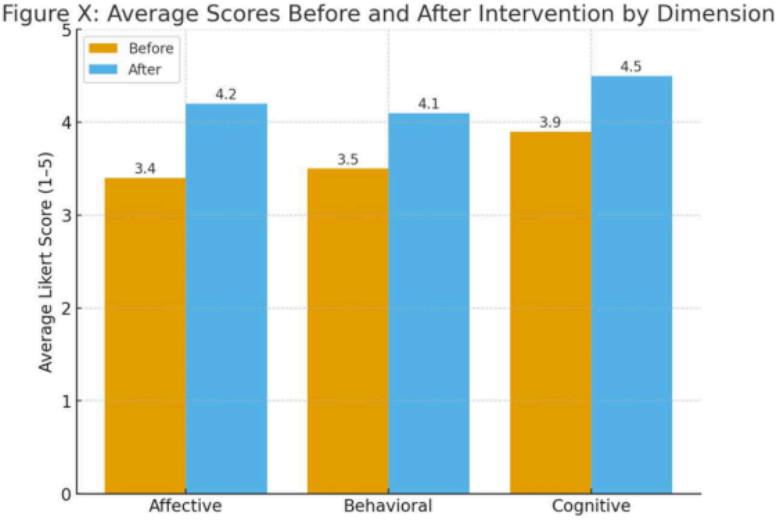


Figure 3. Average scores by dimension (Before vs After)

Dimension-Level Changes Figure X shows dimension-level averages. The Affective dimension recorded the largest increase (+0.8), while Behavioral and Cognitive dimensions each rose by +0.6.

- Affective: 3.4 → 4.2
- Behavioral: 3.5 → 4.1
- Cognitive: 3.9 → 4.5

The results indicate that all three dimensions affective, behavioral, and cognitive showed positive growth following the intervention. The greatest improvement was seen in the affective domain, suggesting that students became more confident and less anxious when speaking English. Behavioral and cognitive aspects also improved, reflecting increased participation in speaking activities and stronger beliefs in their ability to enhance their language skills. These behavioral shifts reflect similar positive trends found when multimedia and interactive online tools are systematically integrated into classroom assessments (Segaran & Hashim, 2022). Overall, these gains demonstrate that AI-assisted learning effectively supports both emotional and practical aspects of students' speaking confidence.

Individual-Level Results

Figure 4 presents participant averages. Strongest gains were recorded by Participants 3 and 4 (+1.0 each), followed by Participants 1, 5, and 7 (+0.6–0.7). Minimal improvements were seen for Participants 6, 8, 9, while Participant 10 showed no change. This variation reflects differences in students' daily engagement with ELSA Speak. The individual results reveal that students who engaged more consistently with ELSA Speak showed greater improvement in their confidence levels. Participants 3 and 4 achieved the highest gains, indicating regular and committed use of the app, while moderate progress among Participants 1, 5, and 7 suggests occasional engagement. In contrast, minimal or no improvement among the remaining participants reflects limited or irregular usage, emphasizing that active participation is key to maximizing the benefits of AI-assisted language learning.

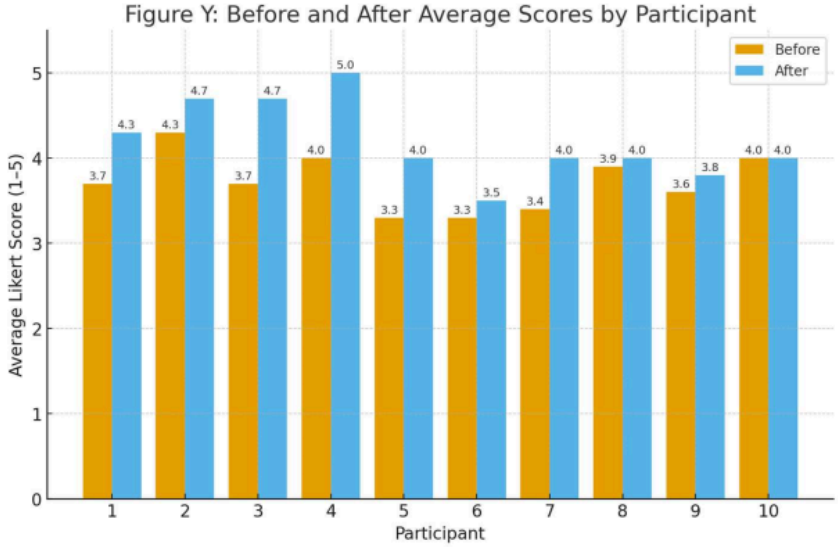


Figure 4. Average scores by participant (Before vs After)

CEFR Performance

Despite the improvements in questionnaire scores across all three dimensions, no significant change was observed in students' CEFR speaking proficiency levels. Most participants remained within the B1 band, suggesting that while confidence and self-perceptions improved, measurable proficiency gains at the CEFR standard require a longer period of sustained practice. In studies tracking rapid technological implementation, indicating that authentic skill acquisition demands sustained, rather than brief, interventions , similar setbacks have been noted (Maran & Hashim, 2022; Yoong & Hashim, 2023).

Discussion

The findings indicate that ELSA Speak positively influenced students' confidence and perceptions of their speaking ability, with the most significant gains observed in the affective dimension. Students reported feeling less nervous and more comfortable when speaking English, while behavioral and cognitive improvements also occurred depending on individual engagement levels. However, measured against the CEFR standards, little change in proficiency levels was detected, suggesting that while confidence increases quickly, measurable language growth requires more extended and structured practice.

These results are consistent with Yıldız (2024), who found that ChatGPT integration enhanced EFL learners' speaking self-confidence and reduced anxiety through a supportive, low-pressure environment. Similarly, Kessler (2023) emphasized that AI-powered systems like Duolingo and ELSA Speak enable real-time feedback on pronunciation and fluency, reinforcing the relationship between technology use and communicative competence. A phenomenon identified as "AI overreliance," where learners accept AI outputs without cognitive processing, thereby limiting long-term proficiency gains, however is crucial for educators to manage (Azmi & Hashim, 2025; Yang, Hussin, & Hashim, 2025).In addition, the role of AI in learner motivation and engagement, as described by Intellectsoft (2025), aligns with this study's observation that students became more willing to participate in speaking activities after using AI tools. Such motivation has been extensively paralleled in studies incorporating multimodal technologies, such as digital storytelling apps and augmented reality, to lower the affective filter (Sam & Hashim, 2022; Selvarajoo & Hashim, 2022).

The results also resonate with MSI Publishers (2025), who reported that AI-powered speaking tools promote authentic oral communication and track learners' progress using CEFR benchmarks. Furthermore, findings from Tandfonline (2025) underscore that AI-based linguistic support can enhance fluency, coherence, and pronunciation outcomes that parallel the positive affective and behavioral gains observed here. The confidence-boosting effects found in immersive drama-based pedagogy and extended metaverse is also highly comparable to the progression seen in the affective domain (Hua, Hashim, & Jamaludin, 2025; Zhang, Hashim, & Yunus, 2025).Taken together, these converging results suggest that AI functions most effectively as a confidence-building supplement to formal instruction. The progression seen in the affective domain supports Sanders' ABC model, where increased confidence (affective) stimulates participation (behavioral), leading to stronger self-efficacy (cognitive). Over time, this cycle can contribute to measurable proficiency improvement if sustained and integrated within structured classroom settings. Thus, this study contributes to ongoing discussions on how AI can be meaningfully embedded in language education to support learner autonomy, engagement, and communicative competence.

Implications

AI applications such as ChatGPT and ELSA Speak are effective in reducing speaking anxiety and building students' confidence before classroom presentations. However, their use needs to be integrated with teacher guidance and designed with a long-term perspective to ensure that gains in confidence align with technical language proficiency (CEFR). Institutions are also encouraged to support student access to these applications.

Research contribution

This study reinforces Sanders' ABC Model within the context of AI-based language learning, wherein affective drives trigger behavioral participation and cognitive beliefs. From a practical standpoint, the study offers guidance to ESL instructors on leveraging AI to foster learner autonomy and demonstrates that students' self-confidence grows more rapidly than their technical proficiency.

Limitations

While the findings of this study demonstrate the potential of ELSA Speak to improve students' confidence and speaking attitudes, several limitations should be acknowledged:

- Cost barrier: The yearly subscription fee for ELSA Speak is relatively high for pre-university learners. Although the app provides valuable personalized feedback, financial constraints limit its accessibility.
- Dialectal challenges: Many participants were from the East Coast of Malaysia, particularly Terengganu. Distinct dialectal features sometimes interfered with speech recognition on the app, causing frustration and reducing feedback accuracy.
- Lack of structured usage: Students were free to use ELSA Speak at their own pace, which led to uneven engagement. Some practiced for one to two hours daily, while others engaged only briefly. This flexibility supported learner autonomy but also resulted in unequal outcomes. Unstructured AI in educational contexts without adequate pedagogical scaffolding accurs as a result of too much freedom in exploring causes challenges (Sharifuddin & Hashim, 2024).
- Limited CEFR progress: Despite improvements in self-reported confidence, little change was observed in CEFR proficiency levels, with most students remaining at B1. This indicates that confidence may improve more quickly than measurable proficiency, and that longer-term, structured exposure is required for advancement in standardized benchmarks, which bring to a necessity to development a more comprehensive, long-term learning modules, similar to successful Massive Open Online Courses (MOOCs) in ESL instruction, to convert affective gains into linguistic competence (Rafiq, Hashim, Yunus, & Pazilah, 2019).

Suggestions

Future research is advised to extend the intervention duration and develop a more structured training module. AI developers also need to improve speech recognition accuracy for various local accents, while schools and the government are expected to provide subsidies for student access to the application.

CONCLUSION

Speak can enhance Malaysian pre-university students' confidence and oral proficiency perceptions, with the strongest improvements observed in the affective dimension. Students reported feeling less nervous and more comfortable speaking English, and moderate gains were seen in behavioral and cognitive aspects such as willingness to participate and belief in their ability to improve. The inevitable transition toward digital learning ecosystems ranging from basic online tools to fully immersive virtual reality continues overtime proven advantageous for breaking down verbal communication barriers (Raman, Lun, & Hashim, 2026).

At the same time, the findings highlight that self-reported confidence improved faster than measurable proficiency. Despite positive questionnaire results, students' CEFR speaking levels showed little change, with most participants remaining at B1. This outcome suggests that while AI tools such as ELSA Speak are powerful for reducing anxiety and encouraging practice, significant proficiency growth requires longer-term, structured integration alongside formal instruction.

The study also underscores important challenges: the high cost of subscription, dialectal barriers affecting recognition accuracy, and uneven engagement due to unstructured usage. Addressing these issues will be essential for sustainable and equitable implementation. In conclusion, ELSA Speak shows strong potential as a confidence-building support tool within Malaysian language education. By combining its use with structured practice, institutional support, and greater accessibility, educators and policymakers can harness AI to complement traditional teaching, foster communicative competence, and gradually promote measurable proficiency gains over time.

ACKNOWLEDGMENT

This research was supported by Universiti Malaysia Pahang Al-Sultan Abdullah under Grant RDU233408. During the preparation of this work, the authors used Google Gemini, ChatGPT, and Grammarly strictly to improve the manuscript's readability, language, and narrative flow. Following the use of these tools, the authors thoroughly reviewed and edited the content to ensure academic accuracy and take full responsibility for the final published article.

AUTHOR CONTRIBUTION STATEMENT

ZB conceptualized the study, developed the methodology, conducted data collection, and drafted the original manuscript. UKAA contributed to formal data analysis, resource preparation, visualization, and drafting the manuscript. MMAA performed validation, data curation, and assisted in review and editing. NYK provided supervision, conceptual support, and critical revision of the manuscript. AAAR managed project administration, funding acquisition, overall supervision, and approved the final version of the manuscript. All authors have read and agreed to the published version of the manuscript.

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