

**TRANSLATING AND ADAPTING CHILDREN'S
HOME INVENTORY FOR LISTENING
DIFFICULTIES (C.H.I.L.D) QUESTIONNAIRE
INTO MALAY VERSION**

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UNIVERSITI SAINS MALAYSIA

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CHILDREN'S HOME INVENTORY FOR
LISTENING DIFFICULTIES (C.H.I.L.D)
QUESTIONNAIRE INTO MALAY VERSION**

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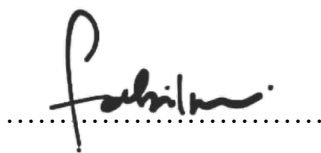
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**Thesis submitted in fulfilment of the requirements
for the degree of Bachelor of Health Science
(Hons) (Audiology)**

July 2025

CERTIFICATION

This is to certify that the dissertation entitled "Translating and Adapting Children's Home Inventory for Listening Difficulties (C.H.I.L.D) Questionnaire into Malay Version" is the project work done by TUAN NORSYARAFINA BINTI TUAN RAMLI from October 2024 to July 2025. We have read this dissertation and, in our opinion, it fulfils the acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfilment for the degree of Bachelor of Health Sciences (Honours) (Audiology).



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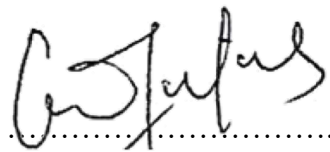
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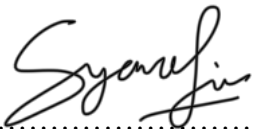
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DECLARATION

I hereby declare that the work has been done by myself, all the results are of my own investigation and any ideas or quotations from others' work are fully acknowledged according to standard referring practices of the discipline. I also declare that it has not been submitted as a whole in previous or concurrently for any other degrees in any institution.



.....
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LIST OF ABBREVIATIONS

APD	Auditory processing disorder
CHAPS	Auditory Performance Scale
CHILD	Children's Home Inventory for Listening Difficulties
CFI	Comparative Fit Index
CFA	Confirmatory factor analysis
ELF	Early Listening Function
ICC	Intraclass Correlation Coefficient
LiD	Listening difficulties
MyPRAT	Malay Parental Report on Auditory Training
PEACH	Parents' Evaluation of Aural/Oral Performance of Children
RMSEA	Root Mean Square Error of Approximation (RMSEA)
WHO	The World Health Organization

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TRANSLATING AND ADAPTING CHILDREN'S HOME INVENTORY FOR LISTENING DIFFICULTIES (C.H.I.L.D) QUESTIONNAIRE INTO MALAY VERSION

ABSTRAK

Pendengaran memainkan peranan penting dalam perkembangan komunikasi, pembelajaran, dan kemahiran sosial kanak-kanak. Soal selidik *Children's Home Inventory for Listening Difficulties* (CHILD) ialah alat laporan ibu bapa yang asalnya dibangunkan dalam Bahasa Inggeris untuk menilai tingkah laku pendengaran kanak-kanak dalam persekitaran harian. Kajian ini bertujuan untuk menterjemah, menyesuaikan secara budaya, dan menilai kebolehpercayaan soal selidik CHILD bagi kegunaan ibu bapa berbahasa Melayu yang mempunyai anak berumur antara 3 hingga 12 tahun. Proses enam langkah telah digunakan untuk menterjemah dan menyesuaikan soal selidik CHILD ke dalam Bahasa Melayu. Ia merangkumi terjemahan awal dan terjemahan balik oleh dua penterjemah masing-masing, semakan pakar, penilaian kandungan, pindaan berdasarkan maklum balas, dan ujian perintis bersama 50 ibu bapa berbahasa Melayu.. Konsistensi dalaman versi Bahasa Melayu adalah tinggi, dengan nilai Cronbach's Alpha sebanyak 0.932, menunjukkan bahawa item-item soal selidik ini secara konsisten mengukur konsep yang sama. Kebolehpercayaan ujian semula juga kukuh, dengan purata *Intraclass Correlation Coefficient* (ICC) sebanyak 0.956, menunjukkan bahawa respons kekal stabil dari masa ke masa. Kanak-kanak menunjukkan prestasi pendengaran yang lebih baik dalam situasi yang tenang dan sosial, serta lebih banyak kesukaran dalam persekitaran yang bising. Dapatan ini sejajar dengan kajian antarabangsa, termasuk versi soal selidik dalam Bahasa Turki. Ini menunjukkan bahawa versi Bahasa Melayu yang diterjemahkan mengekalkan

kebolehpercayaan alat asal dan berkesan dalam mengenal pasti cabaran pendengaran dalam pelbagai situasi harian. Soal selidik CHILD versi Melayu merupakan alat yang boleh dipercayai dan sesuai digunakan dalam konteks klinikal dan penyelidikan di Malaysia, serta memberikan maklumat bermakna kepada para profesional berdasarkan pemerhatian ibu bapa terhadap pengalaman pendengaran harian anak-anak mere

TRANSLATING AND ADAPTING CHILDREN’S HOME INVENTORY FOR LISTENING DIFFICULTIES (C.H.I.L.D) QUESTIONNAIRE INTO MALAY VERSION

ABSTRACT

Listening is vital for a child’s development in communication, learning, and social skills. The Children’s Home Inventory for Listening Difficulties (CHILD) questionnaire is a parent-report tool originally developed in English to assess children’s listening behaviors in daily environments. This study aimed to translate, culturally adapt, and assess the reliability of the CHILD questionnaire for use with Malay-speaking parents of children aged 3 to 12 years. A six-step process was used to translate and adapt the CHILD questionnaire into Malay: (1) forward translation by two independent translators, (2) backward translation by two different translators, (3) review by a bilingual expert panel, (4) evaluation by clinicians and language experts, (5) revision based on expert feedback, and (6) pilot testing with 50 Malay-speaking parents to ensure clarity and cultural suitability. The internal consistency of the Malay version was high, with a Cronbach’s Alpha of 0.932, indicating that the items reliably measured the same underlying concept. Test–retest reliability was also strong, with an average Intraclass Correlation Coefficient (ICC) of 0.956, showing that responses were stable over time. Children showed better listening performance in quiet and social situations, and more difficulty in noisy environments. These findings are consistent with international studies, including the Turkish version of the questionnaire. These results suggest that the translated Malay version maintains the original tool’s reliability and effectively captures listening challenges in different daily situations. The Malay CHILD questionnaire is therefore a reliable and culturally appropriate instrument for clinical

and research use in Malaysia, offering professionals meaningful insights into children's everyday listening experiences based on parental observation.

CHAPTER 1

INTRODUCTION

1.1 Background of study

Hearing is important for effective communication, learning, and emotional well-being. For children, hearing loss can have serious and long-lasting effects on their social development, academic success, and overall quality of life. The World Health Organization (WHO, 2019) estimates that over 34 million children worldwide are affected by hearing loss, with the majority living in low- to middle-income countries. According to Daud et al (2009), that approximately 15% of school children experience hearing loss, with mild cases being the most common. These mild cases often go unnoticed because they do not present with clear physical symptoms. However, children with mild hearing loss may display behaviors such as inattentiveness, frequently asking for repetition, speaking too loudly or softly, or struggling to understand instructions. These signs, when not recognized, can lead to difficulties in learning, social interaction, and academic performance. Children with hearing loss often face delays in developing speech and language skills compared to their hearing peers. This delay can lead to social isolation, academic struggles, and behavioral problems, which may result in increased feelings of anxiety, frustration, and depression. Early identification and intervention are crucial in helping these children reach their full potential. With appropriate support, children with hearing impairments can develop strong language skills, social competence, and academic abilities, enabling them to succeed alongside

their peers.

Several questionnaires focus on assessing hearing abilities in children, each tailored to specific aspects of auditory performance. For instance, the Early Listening Function (ELF), developed by (Anderson, 2003) helps parents evaluate their child's responses to sounds in everyday settings. It examines how children react to sounds at various distances and in noisy environments, providing insights into their early auditory abilities. Another questionnaire, the Parents' Evaluation of Aural/Oral Performance of Children (PEACH), proposed by Teresa Ching and Mandy Hill (2005), measures how children with hearing loss use their hearing in daily life. This questionnaire assesses auditory performance in quiet and noisy environments and evaluates the effectiveness of hearing aids or cochlear implants.

Additionally, the Children's Auditory Performance Scale (CHAPS) allows parents or teachers to assess a child's listening skills in different conditions, such as in quiet, noisy settings, or during memory tasks. This tool helps identify listening challenges that may impact learning or communication (Smoski, Brunt & Tannahill, 2020). Another widely used questionnaire, the Children's Home Inventory for Listening Difficulties (CHILD), developed (Anderson & Smaldino, 2007), gathers information from parents or caregivers about a child's auditory behavior at home to identify potential listening challenges. However, implementing the CHILD questionnaire in a multicultural and non-Western context like Malaysia presents challenges. These include differences in language, cultural norms, and communication styles,

which can affect the questionnaire's relevance and applicability. Despite these challenges, the CHLD questionnaire has significantly contributed to identifying children who may benefit from early intervention strategies.

Malaysia is a linguistically and culturally diverse country, where Malay is the official language, alongside Mandarin, Tamil, and various indigenous languages. These linguistic and cultural variations significantly influence how children and their families perceive and express auditory experiences (Ying, Heng & Abdullah, 2015). The CHLD questionnaire was originally developed within Western contexts, using an English-language framework. Its terminology and cultural assumptions may not align with the everyday experiences of Malay-speaking families, potentially leading to inaccurate assessments. The CHLD's questions and scenarios may not resonate with the local context, and misunderstandings or misinterpretations can arise, hindering the accurate identification of listening difficulties.

There are major cultural differences between Malaysia and the West when it comes to family dynamics, parenting methods, and communication patterns (Lansford, 2022). So, Western terms and phrases may lead to misunderstandings in the contexts of the CHLD questionnaire. In addition, cultural factors, such as societal views on hearing and communication can also influence how parents respond to the questionnaire, affecting its reliability and validity in assessing children's listening abilities. Therefore, this study has a clear purpose and need to create a culturally equivalent version of CHLD questionnaire

that reflects the unique linguistic and cultural context of Malaysia. This adaptation involves translating the questionnaire into Malay and modifying its content to be more consistent with local communication patterns, family structure and cultural norms. This research shows that culturally adapted questionnaire will lead to more accurate assessments and higher parental involvement, resulting in more effective interventions.

The CHILD questionnaire has 15 questions. It helps to assess how well children can listen and understand in everyday situations. Parents or carers will rate the difficulty of each situation using a scale called the "Understand-O- Meter." The scale ranges from 1 to 8. A score of 8 means the child hears every word and understands everything, while 1 means the child does not know someone is talking and misses everything. The scores for all 15 questions are added together, and the average is calculated to show how well the child listens overall (Anderson & Smaldino, 2000).

The purpose of creating CHILD questionnaire is to help hearing-impaired families address their children's real-world communication issues, rather than relying solely on audiograms or other conventional hearing tests. Although an audiogram is a useful diagnostic test, it cannot reveal a child's daily challenges. To better understand children's hearing abilities, CHILD can be used as a family-centered questionnaire that encourages parents to assess and collect information about their children's hearing problems in different everyday situations. This method is necessary to provide an educated and efficient intervention (Anderson & Smaldino, 2007).

The CHILD is flexible and suitable for children aged 3 to 12. Parents or caregivers complete the questionnaire for younger children based on their observations of the child's listening behaviors. For older children (7 years and above), a self-report version allows them to reflect on their own listening experiences. The questionnaire can be administered in both home and clinical settings making it convenient for families. By considering both parental observations and, when applicable, the child's own experiences, the CHILD provides a well-rounded assessment of the child's listening abilities (Anderson & Smaldino, 2007).

In clinical and educational settings, the CHILD serves multiple purposes. It helps identify listening difficulties that may not be evident in clinical environments, assesses the effectiveness of hearing aids or other assistive devices in real-life situations, and assists professionals in counseling families. The questionnaire also offers strategies to improve children's listening abilities, such as minimizing background noise and enhancing visual cues. Additionally, it allows professionals and families to monitor the child's progress, ensuring that interventions are adjusted as needed. Ultimately, the CHILD questionnaire enhances communication between professionals and families, playing a crucial role in optimizing auditory outcomes for children with hearing impairments (Anderson & Smaldino, 2007).

Given these considerations, adapting the CHILD questionnaire to the Malaysian context is critical for ensuring that it accurately captures children's listening difficulties and allows for early, effective

interventions. This research proposes translating and culturally adapting the CHILD questionnaire into Malay version, ensuring its relevance to local norms and practices, thus improving the identification and support of Malay-speaking children with listening difficulties.

1.2 Problem Statement & Study Rationale

Accurately identifying listening difficulties in children is essential for providing timely and effective interventions. However, current questionnaire used to assess these difficulties, such as the Children's Home Inventory for Listening Difficulties (CHILD), are predominantly developed in Western contexts and may not adequately capture non-Western populations' cultural and linguistic nuances, particularly in Malaysia. Malaysia's unique linguistic diversity, comprising languages such as Malay, Mandarin, Tamil, and various indigenous dialects, presents challenges for the direct application of tools like CHILD, which was initially designed for English-speaking families (Ying, Heng & Abdullah, 2015).

The CHILD questionnaire, while effective in Western settings, may need to align with the everyday language and communication styles of Malay-speaking families. The terminology and cultural assumptions embedded in the questionnaire can create barriers to accurate reporting of children's listening behaviors, leading to potential misinterpretations and incomplete assessments. This issue is further compounded by the fact that family dynamics, child-rearing practices, and societal values in Malaysia differ significantly from those in Western

countries, affecting how parents perceive and respond to their children's listening difficulties.

Without an adaptation of the CHILD questionnaire that considers Malaysia's diverse linguistic and cultural context, there is a risk of underdiagnosis or delayed identification of children's auditory issues. This lack of early intervention can have long-term consequences on the child's speech, language, social skills, and academic performance. Given the importance of early intervention in mitigating the developmental impacts of hearing loss, there is an urgent need to develop a culturally and linguistically adapted version of the CHILD tool that reflects the communication norms and practices of Malaysian families.

Therefore, this study aims to address the gap in culturally relevant assessment questionnaire by adapting the CHILD for Malay-speaking families in Malaysia. Through this adaptation, the questionnaire will better capture the unique listening challenges faced by children in a Malaysian context, facilitating early detection and intervention to improve their developmental outcomes. Cultural adaptation of a questionnaire involves adjusting the questionnaire to make it suitable for a different culture. This goes beyond translation by ensuring the language, questions, and response options are meaningful and relevant to the target group. The process usually starts with translating the questionnaire into the new language, followed by back-translation to check for accuracy. It also includes reviewing the questions to make sure they are culturally appropriate and reflect the

values of the target population. The adapted questionnaire is then pre-tested on a small group to find any issues, and changes are made based on feedback to ensure the questions are clear and culturally relevant (Hall *et al.*, 2018).

One of the key strengths of the CHILD questionnaire is its focus on real-life situations. It evaluates how children manage listening tasks in everyday scenarios, such as conversing in quiet or noisy environments, understanding speech over long distances, and following conversations while engaging with media. By concentrating on these practical challenges, the questionnaire provides clinicians with detailed insights into a child's auditory experiences. This information is essential for developing interventions that are specifically tailored to the child's unique needs, ensuring that the support provided is both practical and effective.

Another notable advantage of the CHILD questionnaire is its emphasis on parental involvement. It enables parents to document their child's listening behaviors in various settings, making them active participants in the diagnostic and treatment process. This family-centered approach provides a more comprehensive picture of the child's auditory difficulties, including challenges that may not be apparent during clinical evaluations. As a result, the collaboration between parents and professionals leads to more accurate and well-rounded assessments. The questionnaire also supports the creation of personalized rehabilitation plans. For instance, if a child struggles significantly in noisy environments, the audiologist can focus on

strategies to address this specific issue. Such targeted interventions are more effective because they address the individual needs of the child, leading to better outcomes in communication and overall auditory development.

1.3 Study Objective

General Objective: To translate and adapt the Child's Home Inventory for Listening Difficulties (CHILD) into the Malay version.

Specific Objective:

1. To perform a forward translation of the original English version of CHILD into Malay.
2. To conduct a backward translation of the Malay-translated CHILD back into Malay.
3. To culturally and linguistically adapt the Child questionnaire for use in Malay context.
4. To determine the internal consistency of the translated and adapted questionnaire.

1.4 Research Question

What are the listening difficulties scores among 3 to 12-year-old children as assessed by parents using the adapted Malay version of CHILD?