Journal of Associated Medical Sciences 2023; 56 (3): 13-21

JAMS
Journal of Associated Medical Sciences

Scopus Indexed & Thai-Journal Citation Index Centre (TCI)

Journal of Associated Medical Sciences

Journal homepage: https://www.tci-thaijo.org/index.php/bulletinAMS/index

A survey of standardized tests for language-delayed children used by speech-language pathologists in Thailand

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ARTICLE INFO

Article history:
Received 16 February 2023
Accepted as revised 16 May 2023
Available online 29 May 2023

Keywords:
Speech-language pathologists, standardized test, formal assessment

ABSTRACT

Objectives: The objective of this study was to investigate how speech-language pathologists in Thailand utilized standardized assessments to evaluate children with language development disorders and to discover the perspectives of Thai speech-language pathologists regarding standardized tests.

Materials and methods: This survey sample included 80 Thai speech-language pathologists who were at least 21 years old and had worked for at least one year. The research instrument consisted of a questionnaire of the speech-language pathologists' use of the standardized test to evaluate children on their language development problems. The standardized tests utilized in this study were based on the research of graduate students at the Faculty of Medicine Ramathibodi Hospital in the field of communication problems, as recommended by the Audiology and Speech-Language Pathology professional standards in Thailand.

Results: A questionnaire survey found that 92.50% of speech-language pathologists have assessed patients by using standardized tests in combination with informal tests. The most common reason for speech-language pathologists in choosing the standardized test was to summarize the patient's abilities during training. The other reasons, used in the early stages of receiving patients, were to refer patients, to assess a patient's language proficiency and progress, and to prepare for the discharge of patients.

Conclusion: The majority of speech-language pathologists suggested that standardized tests should be improved to match the current applications, cover patients, and allow easy interpretation of the test results.

Introduction

In 2020, the Department of Health, Ministry of Public Health, Thailand reported a survey for children aged 0-5 years in which 31.82% of children with delayed receptive language development and 31.30% of children with delayed expressive language development were found.[1] In general, assessment has been an important tool for diagnosing language and speech problems. Prior to a training process, a language and speech examination is basically taken with patients in order to determine their main issues and assess their capabilities. Also, assessment is used to measure the progress after an intervention.[2] In addition, the assessment data is used to summarize patient information for referrals to specialists of different fields who choose the approach of speech and language stimulation.[3] The evaluation process can be carried out in

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doi: 10.12982/JAMS.2023.049
E-ISSN: 2539-6056

various ways, including monitoring behaviors, gathering histories, or administering standardized tests.[4] Standardized test is a formal evaluation devoid of context with an impartial and reliable standard approach. This is because the test was developed based on the standardization in a relatively large sample and the provided instructions on how to administer a particular exam. Therefore, standardized tests can be used with children of the same age to compare the patients' abilities.[3]

In 2009, Caesar and Kohler surveyed 409 school-based speech-language pathologists (SLPs) in Michigan about their methods of evaluating children's language skills.[5] The study found that SLPs evaluated the language of children using a combination of formal and informal tests. This study revealed that, despite the existence of at least 37 standardized tests, only six of them were used more frequently.[5] They were Clinical Evaluation of Language Functions (CELF), Peabody Picture Vocabulary Test (PPVT), Preschool Language Scale (PLS), Expressive One-Word Picture Vocabulary Test [EOWPVT], Test of Language Development, and Receptive One-Word Picture Vocabulary Test, all of which were evaluated through informal testing as opposed to standardized testing. This demonstrated that SLPs used informal assessments, such as parent-teacher interviews, Language sampling, informal observations, classroom observations, and dynamic assessment, in addition to the formal ones to improve the assessment in a number of ways.[5]

The research conducted by Khoja investigated the use of formal and informal assessments by 122 SLPs in Saudi Arabia.[6] According to the research, SLPs developed and enhanced standardized tests for their patients. Although some Arabic standardized tests were created, they have not been distributed widely. This may be due to the fact that some authentically developed Arabic tests have been unpublished, standardized on a population that speaks a different dialect of Arabic, or inadequately publicized[6]. It can be partially concluded that the use of assessment tools is closely concerned with the local language and culture if they are designed to be easily accessible. The language used in the test will help enhance the usefulness of the assessment for SLPs.[6]

Since 1987, standardized tests have been used in Thailand to evaluate children with language and speech developmental delays. These tests are listed in the professional standards of Audiology and Speech-Language Pathology in Thailand.[7] However, because they were covered by the Graduate School's copyright, numerous tests created over a lengthy period of time by graduate students in the major of communication disorders at the Faculty of Medicine Ramathibodi Hospital were not easily available.

Therefore, the purpose of this study was to investigate how SLPs in Thailand used standardized assessments to evaluate children with language development deficits and to determine the perspectives of Thai SLPs on standardized tests.

Materials and methods

The population of this study consisted of 173 Thai SLPs who were at least 21 years old and had worked for a minimum of one year. The names and addresses of the population were taken from the all of Speech-Language Pathologist's directory of the Thai Speech-Language and Hearing Association. The research instrument was a questionnaire regarding the use of a standardized test by SLPs in Thailand to evaluate children with language development problems and speech delays. The standardized tests used in this study were based on the research of graduate students at the Faculty of Medicine Ramathibodi Hospital in the field of communication disorders, as indicated in the professional standards of Audiology and Speech-Language Pathology in Thailand (Table 1).[7] The questionnaire had three sections attached with some open-ended and closed-ended questions. Part 1 had a group of questions for SLPs to provide their general information, such as gender, age, education, current work experience, and workplace. Part 2 comprised questions regarding the use of a standardized test to evaluate children with language developmental delays. And part 3 contained the questions that required additional recommendations for evaluating language and speech using standardized tests.

According to the research instrument, the researchers completed a questionnaire using Google Forms and then distributed it via E-mail and public relations via the Thai Speech-Language and Hearing Association's official Facebook page. After gathering the information for over two months, from September to November 2021, a total of 80 SLPs replies were analyzed and summarized. The low response rate might be because the researchers did not have access to the current email addresses of all Thai SLPs. For the process of analysis, the data were entered into a Microsoft Excel spreadsheet. Descriptive statistics were used to analyze the data collected. Also, the free-text responses were analyzed, and the frequencies were calculated for the proportion of respondents.

Results

The questionnaire link was sent to 173 SLPs in total in Thailand. There was a total of 80 respondents, representing 46% of the population. The participants' general information was summarized in Table 2.

A total of 92.50% of the sample, or 74 SLPs, examined the children with language delays using both standardized and informal testing. Meanwhile, 6.25% of SLPs assessed patients using only the informal test, and 1.25% used only the standard test. The outcomes were displayed in Figure 1.

According to Figure 2, 75 individuals provided information on the standardized tests that they had previously taken. It was discovered that the Auditory Comprehension of Language in Thai Children Test was the most popular standardized test, with a score of 85.33%. This was followed by the Ability of Auditory Comprehension of Basic Vocabularies Test, which had a score of 74.67%. Both assessments are standardized tests relating to language comprehension. Respectively, the Thai Semantic Development Test, which was a standardized assessment for evaluating receptive and expressive language skills, came in third place with a score of 72%.

Table 1 Standardized assessments for children with language difficulties utilized in this study.

Standardized tests	Age range	Year of development	Number of samples
Auditory comprehension of language in Thai children[8]	5 years to 6 years 11 months	1987	200
Auditory comprehension of language in Thai children[9]	3 years to 4 years 11 months	1987	200
The auditory comprehension of some adjectives and prepositions in Thai Language[10]	3 years 6 months to 4 years 11 months	1989	150
The auditory comprehension ability of some adjectives in the comparative and superlative degree among Thai children [11]	3 years to 4 years 11 months	1989	400
The psycholinguistic abilities of children[12]	6 years to 9 years 11 months	1993	128
The ability of auditory comprehension of numeral classifiers in Thai children[13]	3 years to 7 years 11 months	1995	100
The production ability of verbs in Thai children[14]	3 years to 4 years 11 months	1996	320
The ability of auditory comprehension of basic vocabularies in Thai children[15]	4 years to 6 years 11 months	1996	300
The verbal production of sentences in normal children by picture arrangement[16]	4 years to 6 years 11 months	1996	210
The production ability of adjective and preposition antonym pairs in Thai children[17]	4 years to 6 years 11 months	1998	360
Thai syntactic development test for children[18]	3 years to 7 years 11 months	2000	500
Thai semantic development test for children[19]	3 years to 7 years 11 months	2000	500
Thai adaptation of the receptive-expressive emergent language test (reel-3)[20]	birth to 36 months	2010	600

Table 2 Summary of the participants' general information.

General participant information		N=80	
		N	%
Age	20-29 years old	39	48.75
	30-39 years old	25	31.25
	40-49 years old	2	2.50
	50-59 years old	8	10.00
	60 years older	6	7.50
Work experiences	less than 5 years	29	36.25
	5-9 years	19	23.75
	10-14 years	16	20.00
	over 15 years	16	20.00

Figure 3 demonstrated that SLPs who utilized standardized tests justified their use during five distinct time periods. Firstly, the purpose of receiving the highest score of 89.33% was to evaluate the training performance of patients. Secondly, 82.67% were assessed when first receiving the patient. Thirdly, 28% were evaluated upon patient referral. Fourthly, 20% were assessed for the patients' language proficiency and progress. Lastly, the purpose with the lowest score of 1.33% was for pre-discharge evaluations.

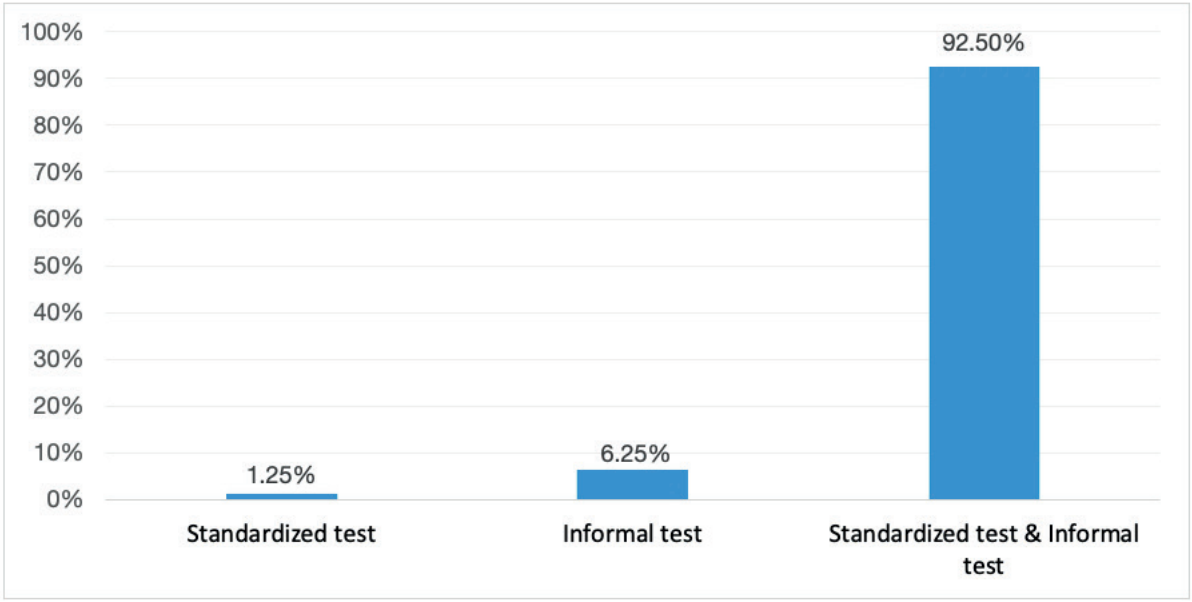

Figure 1. *Assessment methods used by Speech-Language Pathologists in Thailand.*

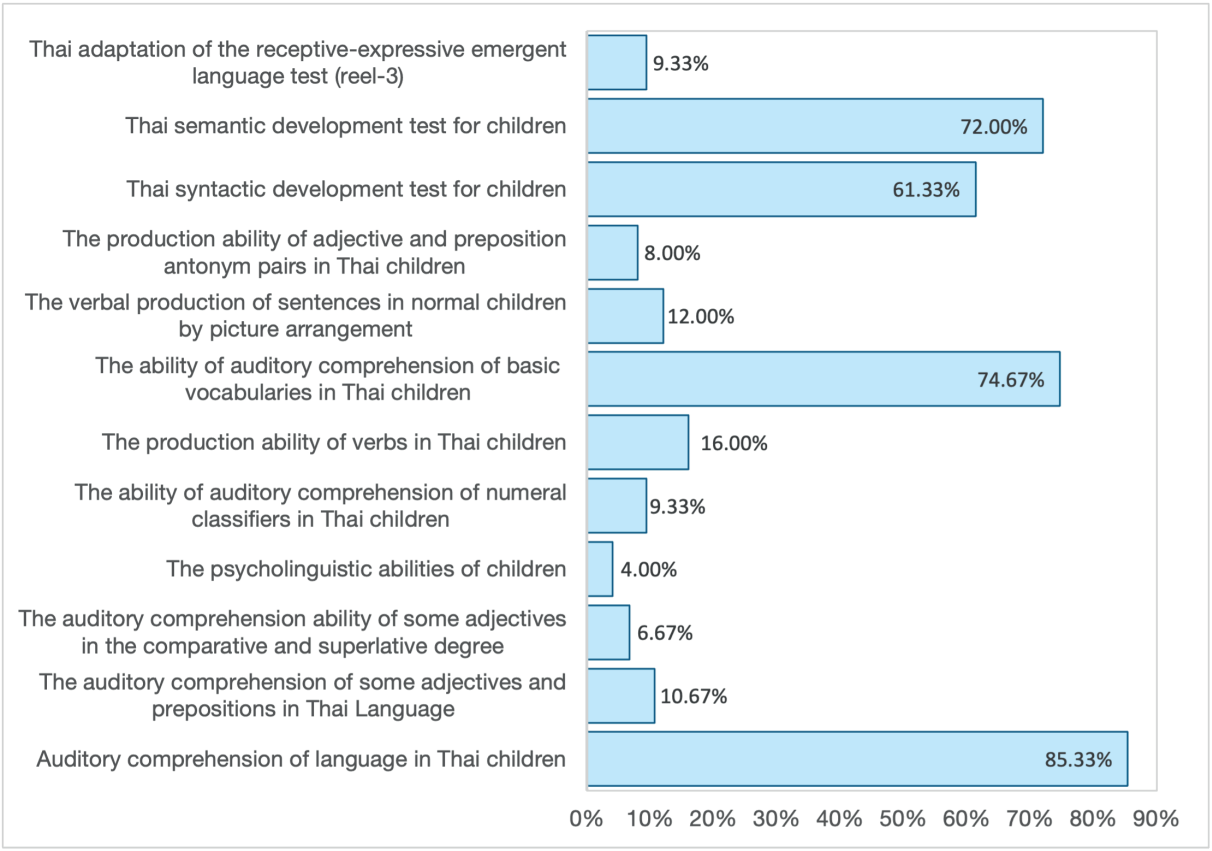

Figure 2*. The number of speech-language pathologists in Thailand using each standardized test.*

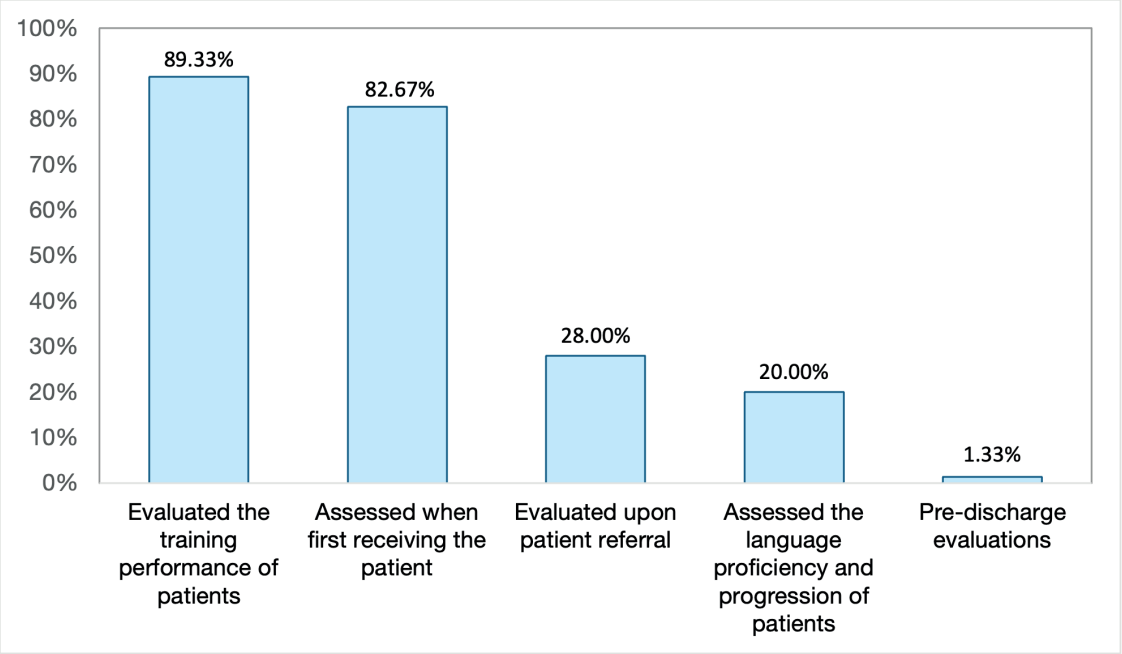

Figure 3. *The purposes for which speech-language pathologists select standardized tests.*

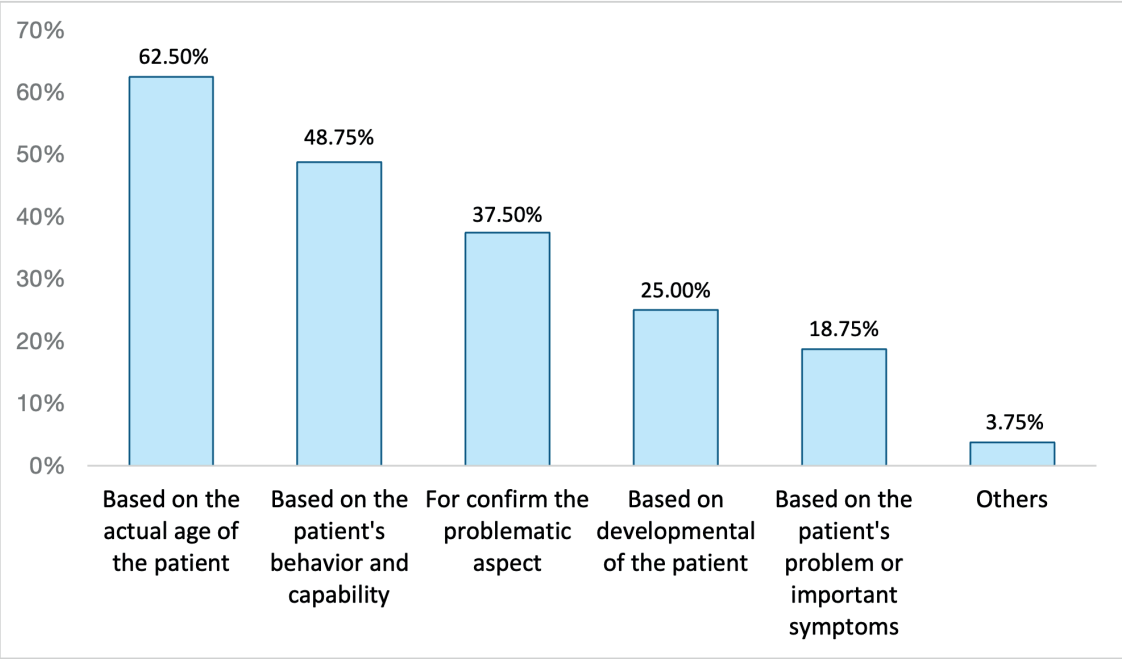

Figure 4. *Factors influencing the decision of speech-language pathologists when selecting a standardized test.*

Figure 4 showed that, among 80 participants, SLPs deemed the standardized test to be appropriate for all patients for the following six factors. First, 62.5% of SLPs selected the standardized test based on the actual age of the patient. The factors secondly chosen by 48.75% of SLPs was the patient's behavior and capability and thirdly by 37.5% of SLPs was to confirm the problematic aspect respectively. The development of the child was the basis for the fourthly selected factor by 25%. 18.75% of SLPS chose the test according to the patient's problem or important symptoms as the fifth factor. Finally, as least number as 3.75% of SLPs chose the standardized test based on other considerations, such as the test's reliability and validity, how it was interpreted, or the length of time.

In the exploration of the tests used by SLPs when standardized tests were unused, the obtained data was clearly shown in Figure 5. Informal assessment through play, language milestone screening, and observation of social communication became the top three informal assessments, accounting for 43.04%, 36.7%, and 34.18%, respectively.

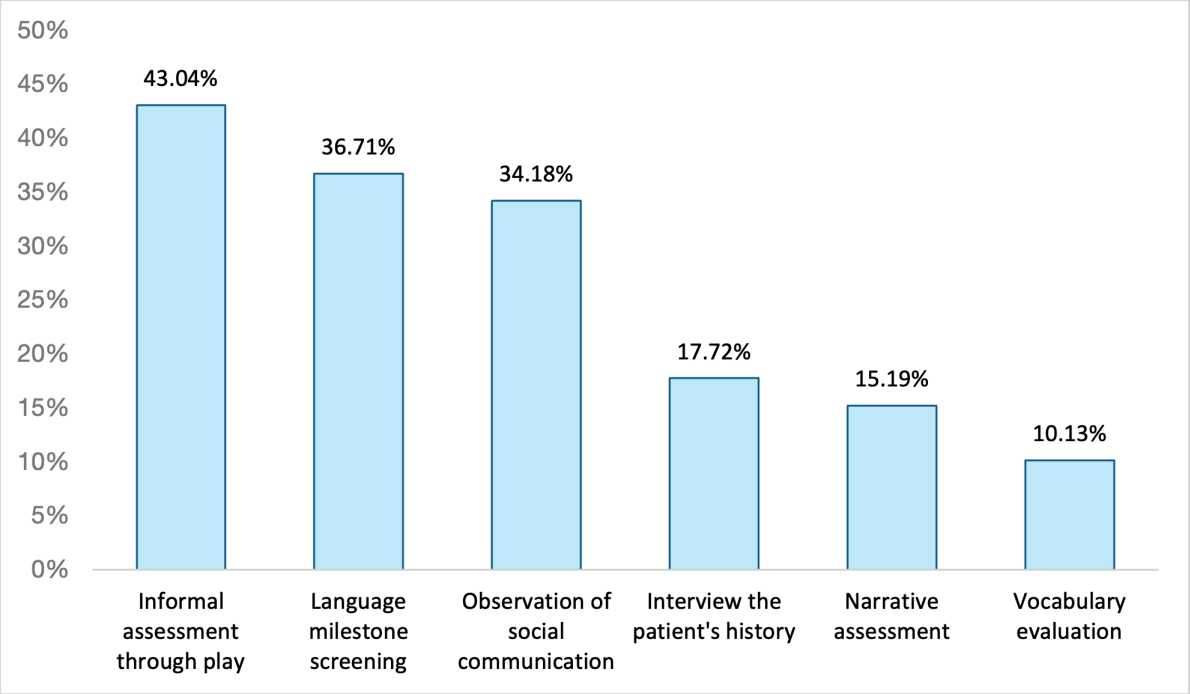

Figure 5. *Other assessments are chosen by speech-language pathologists when not utilizing standardized tests.*

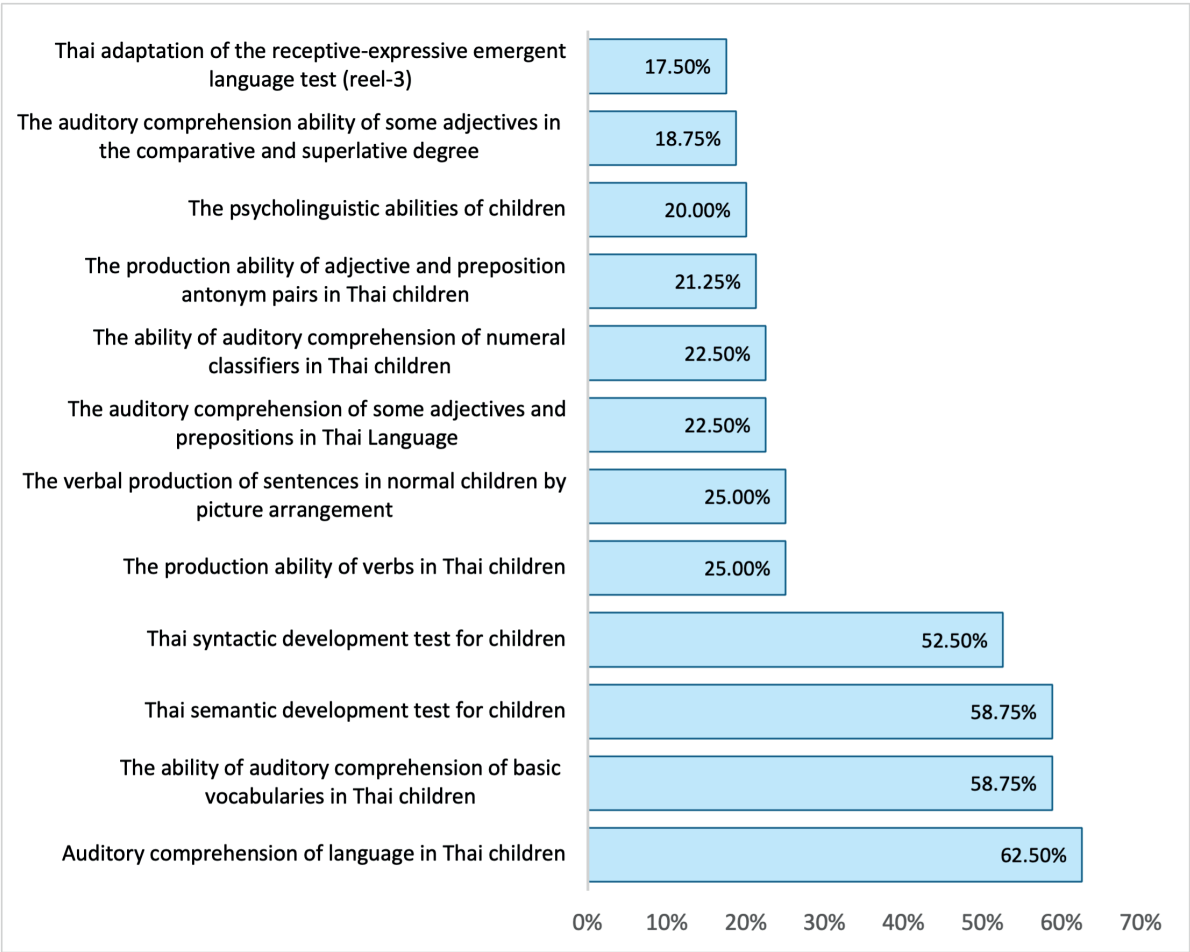

Figure 6. *Standardized tests that speech-language pathologists considered to be improved.*

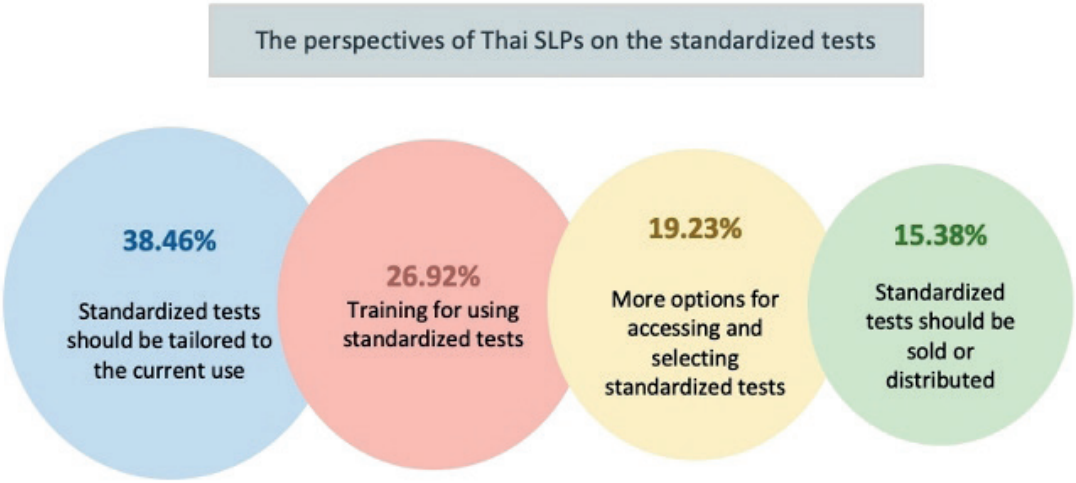

Figure 7. *The recommendations of Thai SLPs on the standardized tests.*

According to Figure 6, the Auditory Comprehension of Language in Thai Children Test (62.5%) was the standard test that SLPs in Thailand needed the most improvement. The Ability of Auditory Comprehension of Basic Vocabularies in Thai Children Test and the Thai Semantic Development Test came in second place with 58.75% each, followed by the Thai Syntactic Development Test in third place with 52.5% respectively.

Based on the results of the survey, SLPs suggested that the standard test should be concerned and revised in the following points: the words and images should be updated; the sample group has evolved and changed over time; the testing time was too long; the results were difficult to be interpreted; and the questions were unclear or with least possible answers.

In Figure 7, regarding the standardized test, SLPs in Thailand made a number of suggestions that could be divided into four main recommendations. First, 38.46% of SLPs recommended that standardized exams should be tailored to the present use in terms of language and test format. The tests should be provided in electronic form with more concise and varied tests so that they can cover a wider range of patient types. Second, 26.92% of respondents indicated that a training program should be arranged to facilitate the speech-language pathologists whose knowledge of the tests was different. Third, 19.23% of respondents suggested that SLPs should have more options for accessing and selecting standardized tests. Finally, 15.38% of those who provided the feedback indicated that the standardized test should be sold or distributed.

Discussion

The purpose of this study was to explore the use of standardized tests for children with speech and language development delays among SLPs in Thailand. The sample consisted of 80 SLPs with at least one year of work experience. The questionnaire survey found that 92.5% of participants assessed their patients by using standardized tests in combination with informal tests. This result was consistent with Caesar and Kohler[5] who demonstrated that the school-based SLPs in Michigan, United States frequently evaluated children using a combination of a standard test and an informal test. This was also consistent with the findings of Khoja who discovered that SLPs in Saudi Arabia evaluated the patients using a combination of standardized and informal tests.[6]

According to this report, the Auditory Comprehension of Language in Thai Children Test was the most popular standardized test, followed by the Ability of Auditory Comprehension of Basic Vocabularies Test. Both tests were assessments of receptive language ability. The Thai Semantic Development Test was ranked in third place and was a standard receptive and expressive language examination. The findings were in accordance with those of Caesar and Kohler who discovered that the SLPs in Michigan most frequently used the United States the Clinical Evaluation of Language Functions (CELF), followed by the Peabody Picture Vocabulary Test (PPVT), and the Preschool Language Scale (PLS) as their standardized tests.[5] The CELF and PLS were the tests of receptive and expressive language respectively, whereas the PPVT was the test of language comprehension. However, some different areas were found in the findings of Khoja.[6] The Preschool Language Scale (PLS), Receptive-Expressive Emergent Language (REEL), and Clinical Evaluation of Language Functions (CELF) were the formal test most frequently used by the SLPs in Saudi Arabia. All these three tests were standardized receptive and expressive language examinations. Nevertheless, these investigations demonstrated that SLPs were accountable for determining a child's language using standardized tests.

Thai SLPs administered standardized tests, taking their application throughout five distinct time periods into consideration. The training performance of patients was evaluated using standardized examinations. It was discovered during the patient's initial visit, transfer to another hospital, examination of the patient's linguistic ability and progress, and the time prior to the patient's discharge. This study concurred with Owen who claimed that SLPs utilized assessments to diagnose language skills, summarize the patient's level of competence and progress, identify the

need for therapy, forecast the duration of treatment, select treatment options, and summarize patient data for specialist referrals.[2] The findings of this study were also consistent with Shipley's who stated that a good assessment should be based on the patient's skills and abilities. In addition, it must be appropriate for the patient's condition including gender, age, skill level, and cultural background.[3]

When SLPs did not use standardized tests, they employed informal assessment through playing, language milestone screening, and social communication observation. The SLPs chose non-standard assessments because children's abilities were not compatible with standardized tests. They had expected to evaluate the children's basic abilities prior to administering standardized tests, and such assessments required less time to administer. The informal assessment used by SLPs as a descriptive-approached assessment was consistent with the findings of Caesar and Kohler which found that SLPs in the United States had other assessments when the standardized test was not in consideration for use.[5] The top three forms of informal evaluation were parent-teacher interviews, language sampling, and informal observation.

Thai SLPs identified the Auditory Comprehension of Language in Thai Children Test as the instrument requiring the most improvement. Meanwhile, the Ability of Auditory Comprehension of Basic Vocabularies in Thai Children Test and the Thai Semantic Development Test ranked in second and third place, respectively. It could be seen that the standardized test that the SLPs needed to be revised corresponded to the three most popular and well-known tests. This also showed that if a standardized test was utilized frequently, it would reveal problems or opportunities for improvement. Changes should be made to enhance and/or modernize psychological and neuro-psychological assessment instruments if the test content and normative data have become outdated.[21]

Conclusion

This study aimed to investigate the use of standardized testing for children with speech and language development deficits among Thai SLPs. Most SLPs conducted patient evaluations using a combination of standardized and informal tests. The most popular assessment was a standardized test of language comprehension and language expression. This indicated that SLPs used standardized tests in order to compare children's language abilities. SLPs confirmed language and speech problems by using standardized tests based on the child's age, behavior, and abilities. In addition, the majority of SLPs recommended that standardized exams should be redesigned to match the current language and test format, as well as to include a wider range of patient types. In conclusion, the findings of this study can be utilized as a guide for improving the standardized tests for children with delayed language and speech development in Thailand.

Limitations of the research and suggestions for future study :

The limitation of this study was that the researchers collected the data only from the standardized test which was based on the research of the graduate students of the Faculty of Medicine Ramathibodi Hospital in the field of communication disorders. Besides, the researcher did not send the questionnaire to SLPs by letter, using only the online sample collection. Suggestions for future research include that the survey should inquire about other standardized assessments established by SLPs. In addition, questionnaires should be distributed via mail and online to collect data in multiple ways. The validity and reliability of the questionnaire should be determined in future studies.

Acknowledgements

The authors would like to thank the Faculty of Medicine Ramathibodi Hospital, Mahidol University, and the Thai Speech-Language and Hearing Association for supporting this research.

Conflicts of interest

The authors declare no conflicts of interest.

Ethics approval

This research gained ethical approval from the Faculty of Medicine Ramathibodi Hospital, Mahidol University on March 31, 2021, and expired on March 30, 2022, with COA. No. MURA2021/ 267.

References

[1] Department of Health. Annual report of the Department of Health 2020. Nonthaburi: Ministry of Public Health; 2020. (in Thai).
[2] Owens RE. Language disorders: a functional approach to assessment and intervention. 4th Ed. Boston: Allyn & Bacon; 2004.
[3] Shipley KG, McAfee JG. Assessment in speech-language pathology: a resource manual. 3rd Ed. New York: Thomson/Delmar Learning; 2004.
[4] Paul R. Language disorders from infancy through adolescence: assessment & intervention. 3rd ed. St. Louis: Mosby Elsevier; 2007.
[5] Caesar LG, Kohler PD. Tools clinicians use: A survey of language assessment procedures used by school-based speech-language pathologists. Commun Disord Q. 2009; 30(4): 226-36.
[6] Khoja MA. A survey of formal and informal assessment procedures used by speech-language pathologists in Saudi Arabia. Speech Lang Hear. 2019; 22(2): 91-9.
[7] Thai Speech-Language and Hearing Association. Code of Ethics, Professional Standards for Audiology and Speech Correction. Khon Kaen: Khon Kaen Printing; 2000.
[8] Harnchumpol W. Auditory comprehension of language in Thai children aged 5 to 6 years 11 months in Bangkok [thesis]. Bangkok: Mahidol University; 1987.
[9] Puntong L. Auditory comprehension of language in Thai children aged 3 years to 4 years 11 months in Bangkok [thesis]. Bangkok: Mahidol University; 1987.
[10] Panyapawakul A. The auditory comprehension of some adjectives and prepositions in Thai Language

among children aged 3 years 6 months to 4 years 11 months in the kindergarten schools in Bangkok [thesis]. Bangkok: Mahidol University; 1989.

[11] Ariyasoponwong S. The auditory comprehension ability of some adjectives in the comparative and superlative degree among Thai children aged 3 years to 4 years 11 months in Bangkok [thesis]. Bangkok: Mahidol University; 1989.

[12] Keawnoi D. The study of psycholinguistic abilities of children aged 6 years to 9 years 11 months by using ITPA [thesis]. Bangkok: Mahidol University; 1993.

[13] Ketudat R. The ability of auditory comprehension of numeral classifiers in Thai children aged 3 years to 7 years 11 months in Phrawet Phrakanong and Khlong Toey [thesis]. Bangkok: Mahidol University; 1995.

[14] Wilainam W. The production ability of verbs in Thai children aged 3 years to 4 years 11 months in Bangkok [thesis]. Bangkok: Mahidol University; 1996.

[15] Tumningan B. The ability of auditory comprehension of basic vocabularies in Thai children aged 4 years to 6 years 11 months in Thonburi and Chomthong Districts in Bangkok [thesis]. Bangkok: Mahidol University; 1996.

[16] Kasemkosin N. The study of verbal production of sentences in normal children aged 4 years to 6 years 11 months by picture arrangement [thesis]. Bangkok: Mahidol University; 1996.

[17] Krisanachantr O. The study of production ability of adjective and preposition antonym pairs in Thai children aged 4 years to 6 years 11 months in Muang district, Chonburi province [thesis]. Bangkok: Mahidol University; 1998.

[18] Intasiri T. The construction of the Thai syntactic development test for children aged 3-7: 11 years old in Bangkok metropolitan [thesis]. Bangkok: Mahidol University; 2000.

[19] Onnark P. The construction of the Thai semantic development test for children aged 3-7: 11 years old in Bangkok metropolitan [thesis]. Bangkok: Mahidol University; 2000.

[20] Lattanan P. Receptive and expressive language of Thai children from birth to 36 months by using a Thai adaptation of the receptive-expressive emergent language test (Reel-3) [thesis]. Bangkok: Mahidol University; 2010.

[21] Ballantyne AO, Spilkin AM, Trauner DA. The revision decision: Is change always good? A comparison of CELF-R and CELF-3 test scores in children with language impairment, focal brain damage, and typical development. Lang Speech Hear Serv Sch. 2007; 38(3): 182-9.