

# Developmental assessment and early intervention for children with developmental delays: A case study in South Australia

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## Abstract

**Background:** Child development monitoring and screening have been mandated as a national health service worldwide, including Indonesia; however, a recent study found that Indonesian community health nurses experienced difficulties detecting and stimulating a child suspected of a developmental delay.

**Objective:** To explore and provide an example of how Australian community health nurses, along with other professionals, contribute to a Universal child and family health service (UCFHS), a similar programme name in Indonesia is child developmental stimulating, detecting monitoring and early intervention programme or SDIDTK.

**Case study:** This is a case study of a young Australian boy (4 years old) whom the mother reported that her son has unclear speech and he was not speaking as much as other children at his age. The researcher, as a nurse, delivered the child developmental assessment and play skills assessment and found that the child has subtle developmental gaps and was at risk for developmental delay. Several goal setting and programming ideas have been developed to meet the child developmental milestones. These include goals in fine motor skills, communication, problem-solving and personal-social skills which have been regarded as early intervention for the child. Together with the therapy from a Speech Pathologist, these goal settings and programming ideas have been collaborated with the kindergarten teachers and the family as well as the UCFHS nurses as part of the child developmental monitoring programme.

**Conclusion:** Developmental delays can be detected through developmental and play assessments and can be followed by developmental stimulation and early intervention programme by developing goal settings and programming ideas around the delays or gaps in play or development.

## Keywords

child development; nurses; Indonesia; early intervention; play assessment

Child development monitoring and screening have been mandated as a national health service worldwide, including in Indonesia. Examples of the service are Child Find and Oregon Healthy Start in the US; Universal Child and Family Health Service (UCFHS) in Australia, and *Stimulasi, Deteksi Intervensi Dini Tumbuh Kembang* (SDIDTK, stands for growth and developmental assessment, stimulation and early intervention) in Indonesia ([Australian Health](#)

[Ministers' Advisory Council, 2011](#); [Macy et al., 2014](#); [Ministry of Health of Indonesia, 2021](#)). Indonesian Ministry of Health has regulated SDIDTK's Law number 66 by 2014 ([Ministry of Health of Indonesia, 2021](#)). This means that child developmental screening, stimulation, and early intervention should be provided regularly in Indonesian community health centres (*Puskesmas*). However, a recent study found that Indonesian community health nurses

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experienced difficulties detecting and implementing early intervention of a child suspected of a developmental delay (Mardiyanti et al., 2020). Meanwhile, other countries have delivered the programme successfully and may become an example for Indonesian health professionals, especially nurses. This article provides an example of how a child suspected of developmental delays has been screened, assessed, stimulated and intervened earlier so that the delay can be minimised or corrected before the child enters the primary school where the delays may become problems.

### Australian Context

The Australian education system provides primary, secondary and tertiary education. Primary education starts from the foundation level (kindergarten or preschool from age 3.5 to 5 years) through year 6 or 7 (Department of Foreign Affairs and Trade, n.d.). Kindergarten or preschool are part of early childhood education which responsible for providing care and supervision for young children, preparing them for school, and ensuring that the children are able to effectively participate in subsequent learning opportunities (Department of Foreign Affairs and Trade, n.d.). This case study took place in South Australia kindergarten.

### Case Presentation

Evan (not his real name), a 50-month-old male, was born prematurely on March 2010 at 36-week of gestation, with his birth weight of 3600 grams. During his first week of life, he experienced jaundice. He was breast-fed and formula-fed during the first 6-month of life because of reduced breast milk supply, then ceased breastfeeding completely at around 6-months. No feeding difficulties were reported during the infant period or at his current age. Physically, his weight and height are appropriate for his age, and he also looks taller than other children at his age. The only concern that his mother and teacher reported was his unclear speech. Dribbling sometimes occurs involuntarily during his speech. Mom reported a speech delay of 6-months, as diagnosed and assessed by the speech pathologist.

In March 2013 (aged 3), Evan's mother had referred him to a speech pathologist due to unclear speech as he was not speaking as much as other children at his age. Evan was assessed using the Diagnostic Evaluation of Articulation and Phonology (DEAP) (Dodd et al., 2006). It was found that his speech is relatively clear at the single word level, but when he tries to sequence sounds to say longer words and put words together, the clarity of his speech diminishes and becomes very difficult to understand. For example, he said: "hou" for a house, "sli" for slide and "muni" for "monkey". Dribbling and low oral muscle tone result in difficulty to precisely make and sequence the tiny movements necessary for connected speech (Rosemary & Usha, 2021). The speech pathologist reported that poor motor control in his mouth and motor

planning component becomes the issue to his imprecise speech. There were no other issues in developmental skills at the time, as she found Evan's play, attention and social skills, and receptive language were appropriate to age. Evan will become a successful verbal communicator if he has regular exercise on speech motor tasks, such as teaching precise movements for different speech sounds and sequencing sounds together to form words and sentences. In addition, she also recommended referring Evan to Ear, Nose and Throat (ENT) specialist to find out any structural issue which may impact his oral motor skills. The Speech Pathologist advised having a hearing test with an audiologist to find any hearing issues that may be impacting his processing of speech sounds. She also advised the mother to include Evan in the Early Entry Preschool Programme where he attended in July 2013 until now, in one of the well-known Adelaide Kindergartens.

The kindergarten principal said that she had made a referral to the Department of Education and Child Development to get support service, but to date, there has been no response. The family paid for private therapy as a result. After following all the recommendations from the speech pathologist, it concluded that he had not had any issue with hearing or structure disorder in his mouth. Currently, one teacher participates regularly in teaching different speech sounds as suggested by the speech pathologist. Since February'14, the focus has been on the speech of words ending with n, ch, f and c/k. Evan shows many improvements in his speech, as reported by the teacher and his mother.

During observation in the kindergarten, it was noted the teachers and his best friend (Nivedh) relatively understand what Evan's says, but it is likely difficult for other friends or adults who are unfamiliar with him. During free play, he pretended to be a spiderman with Nivedh excitedly. He can show others something that interested him, imitates others, join in a group if requested, seek adult assistance, and respond to questions. He also plays like others either inside (craft, puzzle, draw, and storytelling) or outside (climb the rungs, swing and slide). However, his unclear speech made the play assessment to some point hard for the assessor. For example, his verbalisation about the play scenario is hard to understand. In addition, the mother reported that he does not have any friends at home because there is no other child his age nearby. He usually plays with his little sister (Asley, 15-month-old) and his mother, who was not working at that time. Since starting Kindergarten, Evan was not attending other settings for early childhood programme, such as child care.

### Methods

Structured observation has been performed two times; once at the kindergarten class and playground, and secondly observation at the child home. Informal interviews were also performed with the mother and the kindergarten teacher.

## 1. Child developmental assessment

Evan's developmental skills have been assessed using the Australian Developmental Screening Checklist (ADSC), Age and Stage Questionnaire (ASQ-3™) and Play skills checklist (Heidemann & Hewitt, 2010). ADSC is a professional-completed checklist developed by (Burdon., 1994), whereas ASQ-3™ is a parent-completed checklist developed by Squires et al. (2009). The play skills checklist is adapted from Heidemann and Hewitt (2010) and is an observational tool. The use of these tools combines both points of view (parents and professionals), which may differ in how they judge the child's ability. ASQ-3™ has been recommended widely in English-speaking countries because of its sensitivity and specificity (85% and 86%, respectively) (Mackrides & Ryherd, 2011). Many studies recommend ASQ as a standardised screening tool to be used during well-child visits in any clinical settings either in urban or rural settings (Hamilton, 2006; Rydz et al., 2006; Rybski & Wilder, 2008; Burns et al., 2009; King et al., 2010;

Guevara et al., 2013). The ASQ-3™ also utilised by the Child and Family Health Service (CaFHS) in the Adelaide region, which will subsequently be used if families or child health nurses are concerned about the child's development (Arrowsmith, May 28, 2014). Evan's ASQ-3™ results have been reviewed by Arrowsmith (May 28, 2014) from one local CaFHS in the Adelaide region. She suggested some sources and materials for developing Evan's stimulating programme.

Play assessments are often taken in screening children, as play is the central occupation for children (Lynch & Moore, 2016). Play is complex and may reveal many things about the child's development relative to others, including developmental status and functional skills (Casby, 2003) and cognitive ability (Fink et al., 2012).

## 2. Observation

The observation records can be seen in Table 1.

**Table 1** Observation records

Date: 12/5/2014 Child's name & Age: Evan (49 month) Time: 09.15 Setting: Morning session in kindergarten Who is present: one group (23 children), one teacher (leader), and four facilitators		Observer: Yanti Background info: every morning, the one starts with a group session, singing, checking, and greeting each other's (±20 minutes). Other involved: one parent whose daughter was unwell.
Time	Observation	
09.15	T/ asking all students to come to the playroom for the group morning session. E/ follow the instruction and sit down at the front corner closed to his best friend Nivedh. T/ greeting and student too, T/ asked all students to greet all teachers using other languages such as Spanish, French, Chinese, Vietnamese, and Indonesian. Some students follow the greetings; some were not. E/ does too. T/ then asked about the weather today, some students answered correctly, and some were quiet. E/ tried to give his opinion by raising his hand, but the T/ did not look at him as he sat down at the corner. Finally, he said something, but it was not clear. When another student gave a comment to the T/, Nivedh laughed and E/ laughed excitedly, T/ reminded them that there was not something funny, and they stopped laughing.	
09.35	<b>Small group session (Reading story/storytelling)</b> One facilitator with four students (two boys and two girls) sat down in the corner. F/ asked which book they wanted to read. The boys argued as they wanted to read different books, but finally, E/ agreed with his friend and chose to read his book later. F/ read a book about Charlie and Lola with the title "I like tomato" in front of the students. The boys actively questioned and answered with the F/, and the other two girls' students were very quiet. E/ sat beside the F/, which was not a good position as he needed his head to keep turn right to see the book. While being suggested to move, E/ was still in the same position. During the conversation, sometimes F/ understood what E/ said, sometimes not. It was noticed that E/ saliva sometimes splashed while he was talking. E/ looked frequently opened his mouth during storytelling. He pointed to specific pictures frequently and said some words such as "to..a..too" for "tomato"; "..at..is..nge" for "eat fish finger" etc. He asked for a specific picture in the book, and F/ explained it and replied with a question and E/ answered it correctly. It was noticed that his mouth sometimes kept open with the tongue coming out a little bit.	
09.50	Fruit time. E/ walked and grabbed his lunch book. Opened the bag's zipper with his left hand. He took the apple and brought it to the T/ asked for help to cut it and brought it back to the previous place where he left his bag. Together with Nivedh, he enjoyed his apple. I noticed again that E/ could not control his saliva while eating.	
Date: 13/5/14 Child's name and age: Evan (49 months) Time: 09.40 Setting: Kindy's office Who is present: One teacher (S) and Evan		Observer: Yanti Background info: every Tuesday (once a week), S stimulated E with a words card, asked E to mention the word and arranged it in the same group with other words with the letter ends with Ch, N, F and C/K. The programme has started on 26 February 2014. The cards consist of a picture of a word and its letters.
Time	Observation	
09.40	E/ came to the office room in the kindy as the T/ asked him to do so. E/ sat down in a chair, and S/ asked him to sit on the floor because it was for the observer. E/ asked why the observer came to the office, and S explained it simply, and E/ asked again, but the observer could not understand what he's talking about. S looked to understand what E/ said, and she explained and then shifted the focus to the activity. S started the intervention by explaining about talking at the right speed. She explained using a picture of three types of speed talking: slow (snail), just right and too fast (running people). She asked E/ to speak at the right speed. E/ looked at the cards and answered every question. S asked E/ to classify	

**Table 1** (Cont.)

the card based on its sound. There were four groups for words ending with the sound n—ch—f—c/k. Examples of the word card are:
<ul style="list-style-type: none"> <li>▪ Bee-Bean-Beach-Beak</li> <li>▪ Win-witch-whiff-weck</li> <li>▪ Lee-lean-leech-leak</li> <li>▪ Tif-teen-teak-teach</li> </ul>
S asked E/ to sound the words correctly, and E/ did it sometimes clear and sometimes unclear. E/ looked excited with these games, and he tried to sound the words and to put them in the correct group. Sometimes he kept busy on where to put the cards to the correct group and not follow S instruction; he sometimes asked “where to put this on?” and S kept remain E/ to sound it correctly and said, “you know where to put don’t you” E/ looked enjoy if S looked a bit disturbed with his questions. S looked patient and asked E/ to “click them out” every time he finished grouping the cards. There was one word, “tea”, which did not fit with those four groups, and E/ noticed that correctly.
The second games started. S asked E/ to close his eyes while she hid some words. After finished, S asked E/ to open his eyes. S asked E/ to find all the words and to pronounce them correctly. E/ could find most of the words, and when he looked difficult to find, S gave some clue of where the word was. S sometimes reminded E/ to speak just at the right speed if she could not understand what E/ said.
T/: Teacher S/: teacher responsible for Evan language therapy E/: Evan F/: Facilitator

### Results from the developmental assessment

A summary of Evan developmental skills can be seen in Table 2.

**Table 2** Summary of Evan developmental skills from ADSC and ASQ-3

No	Domain	ADSC	ASQ-3™
1.	Communication	Evan is <b>able</b> to name particular objects, join in songs/nursery rhymes, identify “same/different”, ask WH- questions, respond appropriately to questions, and understand or verbalise physical needs. Apparently, his language skills are around the age of 44-49 month.	An overall score is 45, which is above the cut-off (30.72). Evan is <b>able</b> to answer common questions and act to three commands without pointing or repeating (give me the pen, open the book and stand up). Sometimes, he is able to name at least three items for common questions, such as “tell me the names of some animals”. <b>Sometimes</b> , he is able to mention the ending of words (-s, -ed, -ing: such as I see two cats, I kicked the ball, I am playing) and uses all of the words in a sentence (“a”, “the”, “am”, “is” and “are”).
2.	Fine motor	Evan is <b>able</b> to pincer grasp, holds a pencil in hand, not a fist, draws horizontal and vertical lines, turns doorknob to open the door, cut paper with scissors, and draw a circle. Apparently, his fine motor skills are around the age of 44-49 month.	An overall score is 35, above cut-off (15.81) but close to grey areas. He is <b>able</b> to draw three shapes and a picture of people with at least three features (head, eyes, arms, legs). <b>Sometimes</b> he is able to put together a 5 to 7-pieces puzzle, cut a piece of paper using a scissor or unbutton one or more buttons of his clothes. However, he has not yet drawn or colour in within line.
3.	Gross motor	Evan is <b>able</b> to jump forwards: feet together, hops on foot: on the spot, balances on 1 foot for a few seconds, can sit on the floor cross-legged, walks a straight line. Apparently, his gross motor skills are around the age of 50-55 months.	An overall score is 60, which is above the cut-off (32.78). Evan is <b>able</b> to catch a ball, climb, throw a ball, hop up and down, jump forward and stand on one foot for 5 seconds, which are appropriate to his age.
4.	Problem solving/cognitive	Evan is <b>able</b> to tell the name of a friend or playmate, maintain interest or involvement for few minutes, refers to own gender accurately, understands 2: picks two objects, tries to count and understands 3: picks three objects. Apparently, his cognitive skills are around the age of 44-49 months	An overall score is 50, which is above the cut-off (31.30). He is <b>able</b> to repeat three numbers in order without repeating the request, distinguish items by their size, name five different colours, and count items. <b>Sometimes</b> he understands the concept of “under”, “between” and “middle” and does pretend play.
5.	Personal-social	Evan is <b>able</b> to ask for help if needed, can tell his own first name, can wash and dry hands, recognise the gender of his friend Nivedh and himself, is able to go to the toilet by himself, sometimes joins in play with others. Evan is around 44 months development in this area.	An overall score is 45, which is above the cut-off (26.60). He is <b>able</b> to serve himself, wash his hands, and brush all his teeth without any help. <b>Sometimes</b> he is able to mention the names of two or more playmates and recognises his identity, such as his first and last name, age and sex.

**Table 2 (Cont.)**

6. Overall	Evan has strengths in the area of Gross Motor and is just under age appropriate for most other areas. There are some impacts of communication difficulties in his social and communication skills. There are also some slight delays in fine motor development.	<b>No</b> problems in hearing, vision, behaviour and medical problems in the last several months. Evan's mum worries about two things: "not talks like other children at his age" and "Others do not understand most of what your child says". Since under speech therapy last year, Evan's speech now shows many improvements.
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### Play assessment checklist

Based on the play checklist, which looked at areas of social play, communication, pretence and problem solving, Evan does pretend play by using imaginary objects and uses verbal declaration approximation ("I am a Spiderman"). During observation, he enjoys and interacts with Nivedh, and they play together as they are Spiderman and others are the bad people. He enjoys playing in a group if an adult requests it. He is able to show others an interesting object by pointing, bringing the object or express verbally, and engaging in the activities for several minutes or until the activity finishes. He is able to negotiate with a peer about which book should be read during the storytelling group, although then he accepted the adult suggestion without arguing. There are some difficulties in his communication during a play episode, verbalising about the play scenario to his play partner, and being understood. He also tends to play with one (the same) play partner. However, due to parents' permission, the observation settings only happened in the kindergarten. Therefore, there is a need to observe the child's play skills in his house, where he spends most of his time.

### Analysis

Overall, Evan's developmental level is relatively appropriate for his age. He still has many opportunities to improve the "sometimes" skills into his "routine" skills to help him reach his full potential. Evan's mother and the teachers are very good sources in shaping his development. During observation, the mother is very active in questioning and clarifying Evan's progress with the teachers. The teachers also persistently delivered the activity suggested by the speech therapist. It is believed that at the end of the kindergarten programme, Evan will be more than ready for his next primary school.

When looking at each domain in the checklist, more focus should be taken on the fine motor area, communication, problem-solving and personal-social. This means that more activities in these areas should be supported and created. His dislike to colour in should be addressed. In addition, given his unclear speech, this may lessen his motivation to participate in play with others or lessen his social interaction later when others respond unexpectedly or when he realises that his speech is different from other children. This can be seen during observation in the kindergarten; Evan spent his time mostly play with Nivedh and not with other children, though he is an active person and show excellent enthusiasm during group sessions and story-telling. He tries to participate and connect with others, but sometimes others do not respond to him due to his unclear speech. Therefore, we need to develop strategies not only for building his articulation speech but also for encouraging him to interact with other children.

Moreover, support should also be provided to help him achieve the kindergarten's learning outcomes so that he can build a strong sense of identity, feel connected and contribute to the world, a strong sense of well-being, feel confident, independent and involved learner as well as an active communicator (Pasaneda Kindergarten, 2012). Perhaps providing a positive experience will help him construct his strong identity, confidence and independence.

### Goals setting

Goal setting aims to provide assistance for Evan and his family to optimise his child development. The goals have been created based on Evan's developmental level and his emerging skills that need to be strengthened to achieve his full potential. Please see Table 3 (Goals for Evan) and Table 4 (Goals and activities for the families).

**Table 3** Goals for Evan

<b>Fine Motor Goals</b>	
Goal 1. Evan will colour a picture in a colouring book mostly within the lines minimally three times a week in his time at home by July 30.	
Goal 2. Evan will unbutton one or more buttons while undressing his clothes every time he comes back from school or playing with a cloth buttoning strip by June 30.	
Goal 3. Using a child-safe scissor, Evan cuts papers in half on a more or less straight line 3 times a week at home by June 30.	
Goal 4. Using a minimum five- to seven-piece interlocking puzzle, Evan puts them together correctly three times a week by June 30.	
<b>Communication Goals</b>	
Goal 7. (Collaboration with the intervention from Speech therapy). Then requested to sound the words provided, 50 % of Evan's speech sounds are correct and clear by July 31.	



**Table 3 (Cont.)****Problem-Solving Goals**

Goal 8. When requested, Evan pretends to play with one different/new child partner (not Nivedh or his little sister) in the playground or during kindergarten free play minimally once a week by July 30 (collaboration with the teachers).

Goal 9. When requested to participate in socio-dramatic play, Evan can play with two or three children and interact with each other in the kindergarten play sessions 50% by July 31. (Collaboration with the teachers).

**Personal-Social Goals**

Goal 10. When asked by his mum after finish his school session, Evan mentions the names of two or more playmates (not including his little sister) by July 31.

**Table 4** Goals and activities for the families

No	Goals Items	Activities Description
1.	Evan family will look for and use the services from one of the local CaFHS in Adelaide by June 30 (e.g., Kid's health and child developmental monitoring programme).	Explain the CaFHS services in South Australia that family may gain benefits. Provide the website address ( <a href="http://www.cyh.com">www.cyh.com</a> ) or the CaFHS local address and contact number close to their area (Edwardstown CaFHS; 2 Vurness Avenue 5039, Call number <b>1300 733 606</b> between <b>9 am and 4.30 pm</b> , Monday to Friday to make an appointment). Explain that Evan needs an-ongoing services from CAFHS to monitor his development closely (e.g., using ASQ-3™ developmental monitoring until 60-month-old), including the early childhood intervention programme and parenting support.
2.	Evan family will look for and use the services at Forbes children's centre for Early Childhood Development and Parenting by June 30.	Explain the Forbes Children's Centre services that the family may gain benefits, such as: <ul style="list-style-type: none"> <li>• Sessional preschool for children for five sessions a week in the year prior to starting school.</li> <li>• Long daycare child care for Evan or Asley. So, the mother will be helped in raising the children.</li> <li>• Many programmes will benefit the family, such as Dad engagement, developmental play sessions, Saturday playgroup, Family service coordinator, Circle of Security, Premier's be active challenge, Mums of toddler group).</li> </ul>
3.	Evan's family will read to Evan every day.	Offer article to the family about the risk for reading problems in children with speech sound disorders ( <a href="#">Anthony et al., 2011</a> ). The Forbes Children's Centre also creates a programme, Let's Read, to support families reading with their children. Motivate the family to create a reading programme every twice a week at home.

**Programming Ideas**

Programming ideas aim to achieve those goals that are created based on Evan's emerging skills and the availability of resources. Play is extremely important for children's learning. It is regarded as an activity that helps develop the child's cognition, communication, socialisation, sensory-motor functions, problem solving and self-awareness ([Canadian Association of Occupational Therapist, 1996 cited in Stagnitti, 2004](#)). The activities should be integrated into the child's immediate interests

and ongoing activities, although he might avoid these (e.g. colour in) ([Johnson-Martin et al., 2004](#)). The strategy could be to rearrange the environment (e.g. remove the materials the child persists in using for a period during the day and offer other activities) or to become more directed (e.g. "We need to spend some time colour in first, and then you can play with trampoline"). One activity can be used for some or all domains of development; for example, storytelling in a group of children may involve cognitive, fine motor, gross motor, communication and social skills (Table 5).

**Table 5** Activities for Evan

Goals	Activities	Description
Fine motor's goals	Colour in games	Provide "Spiderman colouring books" and colour pencils. Ask him to colour in. If he does not show interest, he will be attracted by modelling first and saying, "I am busy with Spiderman". Alternatively, guide his hand and later let him do it independently. Encourage him by stating, "can you cover all the white?" and "try and stay inside the lines."
	Unbutton games	Ask him to unbutton his cloth or another cloth strip from the dressing vest or doll, which has large, medium and small buttons. If he does not know how to approach this task, slowly demonstrate for him. Then try to assist him physically. He should hold and lightly pull the cloth next to the hole with one hand, grasp the button and push it through the hole with the other hand. Adapted from "The Carolina Curriculum for Pre-schoolers with Special Needs" ( <a href="#">Johnson-Martin et al., 2004</a> )

**Table 5 (Cont.)**

	Cut and draw games	Place a piece of paper and the safety scissors in front of the child. Draw a line from the left to the right side of the paper. Ask him to cut the paper in half or to cut all of the ways across the paper. Give him verbal cues if needed (e.g., "follow the line"). Or use tape by placing it on either side of the line to encourage the child to stay on the line. If he is able to do this, expand the games by cutting a circle, square or pictures that he made and coloured in. It may be helpful to trace around the outline of the picture with a marker before cutting it out. Encourage the child to stay on the line and not cut into a picture. Select pictures easily to cut, then stick them into a paper board. Ask him to put his name and date on it. At the end of June, the families can know how far his progress is. Adapted from "The Carolina Curriculum for Preschoolers with Special Needs" (Johnson-Martin et al., 2004)
	Puzzles	Choose a puzzle that has minimally 5 to 7-pieces. Encourage him to finish the puzzle. If he cannot do it, try to work together or one-by-one or backchain - do all but the last one and ask him to add the last piece. Next time do two last pieces, etc.
Communication	3-related items games	Choose three pictures from common categories (fruit, school items, food), then write the name of the picture on a piece of paper, place it close to the picture. Ask him to answer your question: "things that we eat", "things in the school", "things that are yellow". Encourage the child to choose three pictures and bring them together with the name. If he is able to do this, expand the games by only stating the name of the item. Encourage him to be familiar with the letters. Encourage him to verbalise the name correctly. Model the correct articulation of the words, then ask him to sound them out.
	Identifying the sound of words	Use the word cards from speech therapy or download the new one from <a href="http://www.bugbugkits.com.au/freebiesarticulation/">www.bugbugkits.com.au/freebiesarticulation/</a> . Choose the letter of words that Evan needs to practice. Expand the games to "hungry for K's". Tell him and other children in a group that they are on a special diet and can only eat things that start with the /K/ sound. Ask them to put the things into their lunch box (e.g., carrots, corn, cucumber, ketchup). To make it more complex, add other objects that start with /k/ but cannot be eaten (e.g., cards, cat, key, cow). Alternatively, put some words that do not have any /k/ sound. Count to see how much they can put in their lunch box. Adapted from <a href="http://www.phonologicalawareness.org/#!phoneme/cr2d">www.phonologicalawareness.org/#!phoneme/cr2d</a>
Problem-solving	Spiderman shopping	Ask Evan to play "Spiderman shopping". Creates the situation like a shop. Evan becomes a Spiderman (provide Spiderman costume), and his friend pretends to be a clerk. Provide pictures as a cue to prompt, and ask Evan to buy things that start with the letter /f/. Encourage both of them to interact with each other.
	Spiderman Sick	Ask Evan to play "Spiderman sick" and go to a clinic and meet customer service, doctors, pharmacists, and other people who need help.

## Discussion

Evan, who has speech delays, shows much improvement in his communication since he started the Early Entry programme in kindergarten and several session therapies since last year from the Speech Pathologist. Evan will be more than ready for his next school journey if he and his family join many community-based programmes and do a lot of activities, as suggested above.

Some articles show that Subtle Developmental Problems (SDPs) and Speech sound disorders are at high risk of academic failure, social-emotional disturbance and behaviour problems (Glascoe, 1999; Williams & Holmes, 2004; Anthony et al., 2011). These may be due to poor motor control and motor planning inadequacy that require much more intensive developmental stimulation. This stimulation may be hard to do if the family does not have enough resources and must deal with other demands such as work and other siblings. Therefore, it is important to refer all children with high risks of developmental delays to an early intervention programme, although they have not yet any diagnosis. It also important as well for CaFHS to

monitor the child development closely and support the family. Parent's willingness should also be supported so that they can participate in the programmes fully.

The case in this report might become a good sample where the child may show delays in the communication skills that may not intervene earlier if parents had not sought help from the speech therapist. Early detection of the developmental problem may allow an early intervention programme to reach children's full potential, academic success, independence, and confidence.

## Nursing Implications

Nurses in the community health centres may be inspired by this case study and use the information for developing nursing care for children suspected of a developmental delay or subtle development. Evan's goals may also be used for developing nursing outcomes, and Evan's and family activities used for developing nursing interventions.

The developmental screenings (either ADSC or ASQ-3™) showed Evan's development was normal, although the mother's concerns about Evan's speech problem, therefore play skills assessment may be beneficial in finding which areas of development are specifically at risk

of delay. Therefore it is recommended to use play skills assessment, such as the Pretend Play Enjoyment Developmental Checklist (Stagnitti, 2017) combined with developmental screening tools such as *Kuesioner Praskrining Perkembangan* (KPSP) in the SDIDTK programme. It is also suggested that policymakers train community health nurses for developmental assessment skills and play assessment skills to improve the quality of child universal health service in Indonesia.

### Limitations of this Study

There are several limitations to this study. Firstly, this is a single case study, and further studies would need to include more subjects. Secondly, ideally, child development skills and play skills should be assessed in three different areas (house, school and other public areas such as playground); however, this study only conducts observation in the school and public areas. And thirdly, this case study did not report on outcomes of the early intervention for the child, and further studies would do well to include both quantitative and qualitative outcome data.

### Conclusion

Evan's developmental skills and play are relatively appropriate for his age based on the tools applied, although ASQ-3™ picked up parental concerns that need to be referred into an early intervention programme, followed by monitoring his development closely. Parents are strongly recommended to raise any concerns about their child development and seek help from professionals. Parents' concern and willingness should be encouraged for the success of the early intervention programme and the well-being of the child.

### Declaration of Conflicting Interest

The authors have no conflict of interest to declare.

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### Authors' Contribution

All author contributes to the study's conception and design. MM and MC conceptualized the study. MM performed data collection, MM dan MC drafted the original version of the manuscript. All author accepts the final manuscript.

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### References

- Anthony, J. L., Aghara, R. G., Dunkelberger, M. J., Anthony, T. I., Williams, J. M., & Zhang, Z. (2011). What factors place children with speech sound disorders at risk for reading problems? *American Journal of Speech-Language Pathology*, 20(2), 146-160. [https://doi.org/10.1044/1058-0360\(2011/10-0053\)](https://doi.org/10.1044/1058-0360(2011/10-0053))
- Arrowsmith (May 28, 2014). [Personal communication].
- Australian Health Ministers' Advisory Council. (2011). *National framework for universal child and family health services*. Retrieved from [http://www.health.gov.au/internet/main/publishing.nsf/Content/AFF3C1C460BA5300CA257BF0001A8D86/\\$File/NFUCFHS.PDF](http://www.health.gov.au/internet/main/publishing.nsf/Content/AFF3C1C460BA5300CA257BF0001A8D86/$File/NFUCFHS.PDF)
- Burdon, B. E. (1994). *Australian Development and Screening Checklist Examiner's manual*. Sydney: Harcourt Brace Psychological Corporation.
- Burns, C., Dunn, A., Brady, M., Starr, N., & Blosser, C. (2009). *Pediatric primary care* (4th Ed ed.). St.Louis, Missouri: Saunders Elsevier.
- Casby, M. W. (2003). Developmental assessment of play: A model for early intervention. *Communication Disorders Quarterly*, 24(4), 175-183. <https://doi.org/10.1177/15257401030240040301>
- Department of Foreign Affairs and Trade. (n.d.). *The Australian education system: Foundation level*. Retrieved from <https://www.dfat.gov.au/sites/default/files/australian-education-system-foundation.pdf>
- Dodd, B., Hua, Z., Crosbie, S., Holm, A., & Ozanne, A. (2006). *Diagnostic Evaluation of Articulation & Phonology (DEAP)*. San Antonio, TX: PsychCorp of Harcourt Assessment.
- Fink, N., Stagnitti, K., & Galvin, J. (2012). Pretend play of children with acquired brain injury: An exploratory study. *Developmental Neurorehabilitation*, 15(5), 336-342. <https://doi.org/10.3109/17518423.2012.655798>
- Glascoe, F. P. (1999). Using parents' concerns to detect and address developmental and behavioral problems. *Journal for Specialists in Pediatric Nursing*, 4(1), 24-35. <https://doi.org/10.1111/j.1744-6155.1999.tb00077.x>
- Guevara, J. P., Gerdes, M., Localio, R., Huang, Y. V., Pinto-Martin, J., Minkovitz, C. S., . . . Kavanagh, J. (2013). Effectiveness of developmental screening in an urban setting. *Pediatrics*, 131(1), 30-37. <https://doi.org/10.1542/peds.2012-0765>
- Hamilton, S. (2006). Screening for developmental delay: Reliable, easy-to-use tools. *Journal of Family Practice*, 55(5), 415.
- Heidemann, S., & Hewitt, D. (2010). *Play: The pathway from theory to practice*. United States of America: Read Leaf Press.
- Johnson-Martin, N. M., Hacker, B. J., & Attermeier, S. M. (2004). *The Carolina curriculum for preschoolers with special needs* (2nd ed.). Baltimore: Paul.H.Brookes Publishing Co.
- King, T. M., Tandon, S. D., Macias, M. M., Healy, J. A., Duncan, P. M., Swigonski, N. L., . . . Lipkin, P. H. (2010). Implementing developmental screening and referrals: Lessons learned from a national project. *Pediatrics*, 125(2), 350-360. <https://doi.org/10.1542/peds.2009-0388>



- Lynch, H., & Moore, A. (2016). Play as an occupation in occupational therapy. *British Journal of Occupational Therapy*, 79(9), 519-520. <https://doi.org/10.1177/0308022616664540>
- Mackrides, P. S., & Ryherd, S. J. (2011). Screening for developmental delay. *American Family Physician*, 84(5), 544.
- Macy, M., Marks, K., & Towle, A. (2014). Missed, misused, or mismanaged: Improving early detection systems to optimize child outcomes. *Topics in Early Childhood Special Education*, 34(2), 94-105. <https://doi.org/10.1177/0271121414525997>
- Mardiyanti, M., Cuthbertson, L., & Jewell, P. (2020). What roles do Indonesian nurses play in the early identification and intervention of children with developmental disabilities? A qualitative study *Belitung Nursing Journal*, 6(2), 35-40. <https://doi.org/10.33546/bnj.1039>
- Ministry of Health of Indonesia. (2021). *Tumbuh kembang optimal dengan Stimulasi, Deteksi Dan Intervensi Dini Tumbuh Kembang (SDIDTK) [Optimal growth and development with Stimulation, Detection and Early Intervention on Growth (SDIDTK)]*. Retrieved from [https://kesga.kemkes.go.id/berita\\_lengkap/eyJpdil6InpCYVovb28yeXYrelNiaGxMOGZUT0E9PSlslZhbHVlIjoiVGhhWnlBa0I6VWVlVeThlNzRKcSt1dz09liwibWFjIjoiMzJlY2E1Yjc1OTNkOWE2MmU1ZjRIOGY2YmZlZmI4MTJkOWI5NTcyYzY1NGM4MjZmNTk5MjM1NDNhNjJkYjhmZiJ9](https://kesga.kemkes.go.id/berita_lengkap/eyJpdil6InpCYVovb28yeXYrelNiaGxMOGZUT0E9PSlslZhbHVlIjoiVGhhWnlBa0I6VWVlVeThlNzRKcSt1dz09liwibWFjIjoiMzJlY2E1Yjc1OTNkOWE2MmU1ZjRIOGY2YmZlZmI4MTJkOWI5NTcyYzY1NGM4MjZmNTk5MjM1NDNhNjJkYjhmZiJ9)
- Pasaneda Kindergarten. (2012). *Parent information booklet*. Retrieved from [www.pasadenakn.sa.edu.au/parentinfo.htm](http://www.pasadenakn.sa.edu.au/parentinfo.htm)
- Rosemary, & Usha. (2021). Oral muscle tone in speech and feeding. Retrieved from <https://www.playstreet.in/2021/01/18/oral-muscle-tone-in-speech-and-feeding/>
- Rybski, D. A., & Wilder, E. (2008). A pilot study to identify developmental delay in children in underserved urban community child care settings. *Journal of Allied health*, 37(1), 34E-49E.
- Rydz, D., Srouf, M., Oskoui, M., Marget, N., Shiller, M., Birnbaum, R., . . . Shevell, M. I. (2006). Screening for developmental delay in the setting of a community pediatric clinic: A prospective assessment of parent-report questionnaires. *Pediatrics*, 118(4), e1178-e1186. <https://doi.org/10.1542/peds.2006-0466>
- Squires, J., Twombly, E., Bricker, D., & Potter, L. (2009). *ASQ-3 User's Guide*. Baltimore: Paul.H.Brookes.
- Stagnitti, K. (2004). Understanding play: The implications for play assessment. *Australian Occupational Therapy Journal*, 51(1), 3-12. <https://doi.org/10.1046/j.1440-1630.2003.00387.x>
- Stagnitti, K. (2017). Pretend Play Enjoyment Developmental Checklist (PPE-DC). Retrieved from <https://www.learntoplayevents.com/product/pretend-play-enjoyment-developmental-checklist-ppe-dc-starter-package/>
- Williams, J., & Holmes, C. A. (2004). Improving the early detection of children with subtle developmental problems. *Journal of Child Health Care*, 8(1), 34-46. <https://doi.org/10.1177/1367493504041852>

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