

# Kids in Taiwan:

## National Longitudinal Study of Child Development and Care

### Domains, reliability and validity of M36-M72 questionnaires

The *Kids in Taiwan: National Longitudinal Study of Child Development and Care* project uses Parent Questionnaire, Relative&Friend Questionnaire, and Educarer Questionnaire to collect developmental and environmental information of children from 3 to 6 years old in Taiwan. The final versions of the questionnaires were established after expert evaluation, cognitive interviewing, and several pilot studies. This document provides the result of the reliability and validity analysis of the Parent Questionnaire, the Relative&Friend Questionnaire, and the Educarer Questionnaire.

#### 1. Parent Questionnaire

The Parent Questionnaire includes information on the parents, child cognitive development, child language development, child social and emotional development, child physical motor development, family environment and experience, childcare survey, and child health information. The result of the reliability and validity analysis of the Parent Questionnaire is based on the pilot study conducted in 2015.

The pilot study was conducted in New Taipei City in Taiwan. The districts of New Taipei City were divided into three strata based on the level of urbanization (Luo,1992)<sup>1</sup>. The districts in each stratum are listed in table 1. Children in the daycare centers or cared for by the registered nannies within each stratum were purposively sampled. Parents of a total of 280 children between 2 to 6 years old completed the Parent Questionnaire, and 142 of them completed the retest two weeks after the first survey.

Table 1 New Taipei City districts in urbanization strata

1 <sup>st</sup> stratum	2 <sup>nd</sup> stratum	3 <sup>rd</sup> stratum
Banqiao, Sanchong, Zhonghe, Yonghe, Xinzhuang, Luzhou	Xindian, Tamsui, Xizhi, Tucheng, Shenkeng	Shulin, Yingge, Sanxia, Wugu, Taishan, Linkou, Sanzhi, Bali、Ruifang, Shimen, Gongliao, Jinshan, Wanli, Shiding, Pinglin, Pingxi, Shuangxi, Wulai

<sup>1</sup>Luo (1992). *A study on the equitable regional development in Taiwan* (unpublished dissertation). Taipei, Chinese Culture University.

Table 2 lists the scale/domain, reliability and validity, and variables of the child development questions and the family domain questions in the Parent Questionnaire. Detailed information regarding the development of the questionnaires can be found in the following publications:

Wang, S. M., Lee, J. R., & Chang, C. J. (2015). The Behavioral Rating Inventory of Cognitive Development for 2-5 Year Olds: A Parent-Completed Assessment. *Psychological Testing*, 62(4), 279-302.

Liu, H. M., Chen, P. H., Huang, S. C., Chen, Y. W., & Chang, C. J. (2018). Inventory of Language Development for 0-6 Years Old Children: A Parental Questionnaire. *Psychological Testing*, 65(1), 95-123.

Po, Y. H., Chen, C. L., Chang, C. J., Chen, P. H., Chen, H. C., Chung, C. Y., Wang, C. C., Fu, R. H., & Chou, L. T. (2016). Preliminary Studies of the Developmental Motor Assessment Scale for Preschool Children: Development and Validation. *Taiwan Journal of Physical Medicine and Rehabilitation*, 44(2), 71-80.

Wang, C. C., Chang, C. J., Chen, P. H., Liu, W. Y., Chen, C. L., Tsai, C. C., Fu, R. H., Chou, L. T., & Chu, S. M. (2016). Developing and Validating a Screening Scale for Assessing Preschool Children's Motor Development: A Preliminary Study. *Taiwan Journal of Physical Medicine and Rehabilitation*, 43(4), 239-25.

Table 2 : Scale/Domain, Reliability and Validity, and Variables of the Parent Questionnaire

Area	Scale/Domain	Reliability and Validity	Variables
<b>Cognitive development</b>	<b>1. Memory</b> <b>2. Attention/ Executive function</b>	<b>Internal consistency:</b> $\alpha=.95$  <b>Criterion validity:</b> Correlation between total score and CDIITa cognitive development, $r=.63$  Correlation between total score and CDIIT language comprehension, $r=.62$  Correlation between total score and CDIIT language expression, $r=.72$	<b><u>1. Memory</u></b> cogC01 The child plays role-playing games. For example, the child pretends to cook, or pretends that he/she is a doctor. cogC02 Without any help, the child speaks out his/her age accurately on his/her own. cogC03 When the child is asked about his/her gender, the child answers correctly. cogC04 The child speaks out

			<p>correctly two different color names.</p> <p>cogC05 The child knows what a round shape is.</p> <p>cogC06 The child speaks out correctly the name of his/her mother or father.</p> <p>cogB01 The child communicates orally the meanings of objects in his/her own drawings.</p> <p>cogC07 The child knows which book(s) he/she has read or someone has read to him/her before.</p> <p>cogB02 The child differentiates what is alive from what is lifeless.</p> <p>cogB03 The child counts aloud the numbers 1 to 21 in correct sequence without missing any numbers.</p> <p>cogB04 The child states accurately the month in which he/she was born.</p> <p>cogB05 The child understands the difference between toy money and real money.</p> <p>cogB06 The child sketches details of a person such as hair and fingers when drawing.</p> <p>cogB07 The child states accurately his/her home number or his/her</p>
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			<p>family's number.</p> <p>cogB08 The child communicates orally a make-up story.</p> <p>cogB09 The child knows that his/her preferences are different from others.</p> <p>cogB10 The child communicates clearly the reason why he/she likes something.</p> <p>cogB11 The child counts aloud the numbers 1 to 100 in correct sequence without missing any numbers.</p> <p><b><u>2. Attention/Executive function</u></b></p> <p>cogB12 The child knows that his/her behaviors may influence others.</p> <p>cogB13 When being reminded, the child slows down what he/she is doing and does the activity better.</p> <p>cogB14 The child plays or participates in puzzle game(s) or activities.</p> <p>cogC08 When being asked, the child puts the toy or used object back to where it is usually placed.</p> <p>cogC09 In a public place, when you ask the child to lower his/her voice, he/she follows the instruction immediately</p>
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			<p>and stays that way for at least several minutes.</p> <p>cogC10 At home, when you say “no”, the child stops running or jumping immediately and stays that way for at least several minutes.</p>
<p><b>Language development</b></p>	<p><b>1. Comprehension</b>  <b>2.Expression</b>  <b>3. Emergent literacy</b></p>	<p><b>Internal consistency:</b>  <math>\alpha=.93</math></p> <p><b>Criterion validity:</b>  Correlation between total score and CDIIT language comprehension, <math>r=.61^{***}</math></p> <p>Correlation between total score and CDIIT language Expression, <math>r=.75^{***}</math></p> <p>Correlation between total score and CDIIT language development, <math>r=.69^{***}</math></p> <p><b>Correlation between domains:</b>  Comprehension and Total score, <math>r=.79^{***}</math>  Expression and Total score, <math>r=.92^{***}</math>  Emergent literacy and Total score, <math>r=.89^{***}</math></p> <p><b>Test-retest reliability:</b>  <math>r=.84^{***}</math></p>	<p><b><u>1.Comprehension</u></b></p> <p>lanC01 The child can understand a simple oral instruction and follow that instruction (e.g., “Clap”).</p> <p>lanC02 The child can understand two or more oral instructions and follow them in the right order (e.g., “Clap first and then touch the head”).</p> <p>lanB01 The child can understand a simple joke spoken or a pun used by another person (e.g. “Where do polar bears vote? The North Poll.”).</p> <p><b><u>2.Expression</u></b></p> <p>lanC03 The child can speak out words that are used to describe a person, an event, or a thing in his/her daily life (e.g., “cold water” or “beautiful aunt”).</p> <p>lanC04 The child can answer questions like “what is</p>

			<p>this?”(e.g., When the child is asked “what is this stuff?”, he/she can answer “a banana”;</p> <p>when the child is asked “what is this place?”, he/she can answer “a school”).</p> <p>lanB02 The child can answer “why” questions (e.g., When the child is asked by an adult, “why aren’t you in bed?” the child can answer “I still want to play.”).</p> <p>lanB03 The child can combine two simple sentences to create a complex sentence (e.g., “My little brother was naughty, my mother hit him” or “The injection was painful, I didn’t cry.”).</p> <p>lanB04 The child can combine two simple sentences to create a sentence with a conjunction (e.g., “My little brother was naughty, so my mother hit him,” or “The injection was painful, but I didn’t cry.”).</p> <p>lanB05 The child can talk about a person or a thing that is not present (e.g., when the child’s bear is not in the cradle,</p>
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			<p>he/she can say “my bear is gone.”).</p> <p>lanC05 When the child talks to someone he/she is familiar with (e.g., his/her parent or teacher), he/she can initiate a topic.</p> <p>lanC06 When the child can’t understand what a person says or can’t hear him/her clearly, the child can actively ask this person to clarify (e.g., “What did you just say?” or “Can you say that again?”).</p> <p>lanB06 The child can clearly explain the procedure to complete something (e.g., the child can explain how to build a castle with toy building blocks or the rules of a game).</p> <p><b><u>3.Emergent literacy</u></b></p> <p>lanC07 The child knows the meanings of signs, images, and symbols which are commonly seen in his/her daily life (e.g., traffic lights or the sign of a convenient store).</p> <p>lanC08 When the child turns over a page of a book, the direction of the book is correct (e.g.,</p>
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			<p>the book is not placed upside down).</p> <p>lanC09 The child knows that the title and the name of the author/illustrator of a picture book are on the cover of that book.</p> <p>lanB07 When the child reads a page of a book, he/she knows where to begin (e.g., reading from left to right or reading down from the top).</p> <p>lanB08 The child can understand or read out simple characters (e.g., his/her name or characters commonly seen in his/her daily life).</p> <p>lanB09 The child can express his/her emotions and thoughts through paintings or symbols (including characters) (e.g., picture diary or a list of objects).</p>
<b>Social and emotional development</b>	<p><b>1. Temperament</b> including :</p> <p>Extraversion temperament,</p> <p>Effortful control temperament,</p> <p>Negative emotionality temperament</p>	<p><b>Internal consistency:</b></p> <p>Extraversion temperament, <math>\alpha = .66</math></p> <p>Effortful control temperament, <math>\alpha = .63</math></p> <p>Negative emotionality temperament, <math>\alpha = .60</math></p> <p>Secure attachment, <math>\alpha = .66</math></p> <p>Emotional competence, <math>\alpha = .86</math></p> <p>Social competence, <math>\alpha = .87</math></p>	<p><b><u>1. Temperament</u></b></p> <p><b><u>Extraversion temperament</u></b></p> <p>socB01 The child prefers active activities (e.g., kicking ball or running) rather than sedentary activities (e.g., reading books or playing chess).</p> <p>socC04 When a new activity is introduced to the child,</p>



	<p><b>2. Secure attachment</b></p> <p><b>3. Emotional competence</b> including : Emotional awareness, Emotional expression, Emotional understanding, Emotional regulation</p> <p><b>4. Social competence</b> including : Independence, Assertiveness, Sociability, Compliance</p> <p><b>5. Withdrawal</b></p> <p><b>6. Aggression</b></p> <p><b>7. Shyness</b></p> <p><b>8. Shame</b></p>	<p>Withdrawal, <math>\alpha = .80</math> Aggression, <math>\alpha = .81</math></p> <p><b>Correlation between emotional competence domains and total scores:</b> Emotional awareness, <math>r = .73</math> Emotional expression, <math>r = .79</math> Emotional understanding, <math>r = .88</math> Emotional regulation, <math>r = .71</math></p> <p><b>Correlation between social competence domains and total scores:</b> Independence, <math>r = .67</math> Assertiveness, <math>r = .85</math> Sociability, <math>r = .85</math> Compliance, <math>r = .68</math></p>	<p>he/she participates in the activity immediately.</p> <p>socC05 In a gathering among familiar people, the child likes to play with various individuals.</p> <p><b><u>Effortful control temperament</u></b></p> <p>socB02 The child pays attention to changes in his/her surroundings or people around him/her (e.g., he/she quickly discovers newly purchased items at home, or, notices his/her parent's new haircut).</p> <p>socB03 While getting ready to go out, the child thinks about what he/she might need in advance (e.g., the child prepares his/her own backpack or things to carry with him/her).</p> <p>socC16 After being reminded by an adult, the child pays attention to his/her personal safety or adapts his/her behavior to accommodate the surrounding area (e.g., when the child is brought to a store selling breakable goods, he/she walks with extra care).</p>
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			<p>socC17 The child stays involved or engaged with his/her favorite toys or activities for a long period of time.</p> <p><b><u>Negative emotionality</u></b></p> <p><b><u>temperament</u></b></p> <p>socB04 The child is afraid of the dark or worries about imaginary monsters showing up.</p> <p>socB05 The child feels frustrated easily, for example, he/she feels failure easily while doing activities or tasks.</p> <p>socC01 The child gets angry if I don't respond to him/her when he/she wants my hug or to play with me.</p> <p>socC06 The child gets angry or loses his/her temper easily.</p> <p><b><u>2.Secure attachment</u></b></p> <p>socC02 The child turns around to look for me or locates my whereabouts when I am not near him/her.</p> <p>socC03 When I tell the child "it's ok", he/she approaches the objects which originally scare him/her.</p> <p>socC09 When I come home, the child shows his/her joy immediately by smiling</p>
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			<p>or greeting me.</p> <p>socC10 When I am in a bad mood, the child becomes quiet, comforts me, or asks me why I feel sad.</p> <p><b><u>3.Emotional competence</u></b></p> <p><b><u>Emotional awareness</u></b></p> <p>socB06 The child feels embarrassed when he/she notices that someone is watching him/her.</p> <p>socC11 The child becomes quiet when he/she notices my angry expression.</p> <p>socC12 When the child sees someone trips or falls, he/she knows that person is in pain.</p> <p><b><u>Emotional expression</u></b></p> <p>socB07 The child expresses his/her feelings through words or body gestures (e.g., hugging or stamping his/her foot).</p> <p>socB08 The child laughs when he/she hears funny jokes.</p> <p>socB09 The child communicates to his family what he/she is afraid of.</p> <p><b><u>Emotional understanding</u></b></p> <p>socB10 The child reads other's emotions by observing that person's facial</p>
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			<p>expression (e.g., when the child sees me grimacing when I take my medicine, he/she knows that the medicine tastes awful).</p> <p>socB11 The child knows that he/she can express the same feeling in various degrees (e.g., smiling versus laughing, sobbing quietly versus crying loudly).</p> <p>socB12 The child knows that he/she can have two different kinds of feelings at the same time (e.g., playing hide-and-seek can be both fun but also scary).</p> <p>socC13 The child checks my facial expression to decide whether he/she should approach an unfamiliar toy or person.</p> <p>socC18 While encountering strangers or new environment, the child uses my facial expression as a cue to decide how he/she should behave.</p> <p><b><u>Emotional regulation</u></b></p> <p>socB13 When the child encounters frustrating or difficult situations, he/she controls his/her</p>
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			<p>temper and remains calm.</p> <p>socB14 When the child is scolded, he/she adjusts his/her mood and accepts the scold calmly.</p> <p>socB15 The child calms down himself/herself after stimulating activities.</p> <p>socB16 The child delays his/her needs for emotional support (e.g., when the child is bullied, he/she waits for an adult to arrive before making a complaint).</p> <p><b><u>4. Social competence</u></b></p> <p><b><u>Independence</u></b></p> <p>socB17 The child has the habit and attitude of “being self-reliant”.</p> <p>socB18 The child independently accomplishes what he/she can do, without prompting or support from others.</p> <p><b><u>Assertiveness</u></b></p> <p>socB19 The child suggests games for peers to play.</p> <p>socC14 The child shows his/her interest or preference to others using his/her voices, words, gestures, or movements (e.g., he/she points to a car and looks at his/her</p>
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			<p>mother with a smile).</p> <p>socC19 When the child participates in an activity or discussion, he/she expresses his/her own views or opinions without being prompted.</p> <p>socC20 The child tells others his/her feelings without being prompted.</p> <p><b><u>Sociability</u></b></p> <p>socB20 The child cooperates with peers to complete a task.</p> <p>socB21 When the child plays with peers, he/she takes turns with the equipment or toy.</p> <p>socC15 The child likes to share his/her toys with other adults or children.</p> <p>socC21 The child shares his/her things (e.g., toys or stationery) with other children.</p> <p><b><u>Compliance</u></b></p> <p>socB22 The child goes to bed on time even when he/she is not yet sleepy.</p> <p>socB23 When the child is being requested to clean up, he/she listens and does as told.</p> <p>socC22 When the child is being requested to stop playing a specific game, he/she obeys and</p>
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			<p>stops playing the game.</p> <p><b><u>5.Withdrawal</u></b></p> <p>socB24 The child is timid and is afraid to try new things.</p> <p>socB25 The child does not like to try new activities or to approach new environments.</p> <p>socB26 The child does not like to talk to or play with other children.</p> <p><b><u>6.Agression</u></b></p> <p>socB27 The child damages other people’s things on purpose.</p> <p>socB28 The child excludes other children.</p> <p>socB29 The child teases other children.</p> <p>socB30 The child kicks, hits, pushes, or pinches other children.</p> <p><b><u>7.Shyness</u></b></p> <p>socC07 The child gets shy when meeting unfamiliar adults.</p> <p><b><u>8.Shame</u></b></p> <p>socC08 The child feels ashamed when he/she does something wrong.</p>
<b>Physical motor development</b>	<p><b>1. Gross motor</b> including : Stability &amp; locomotion, Body coordination</p> <p><b>2. Fine motor</b></p>	<p><b>Internal consistency:</b> <math>\alpha=.98</math></p> <p><b>Criterion validity:</b> Correlation between domain scores and PDMSII<sup>b</sup> scores</p>	<p><b><u>1.Gross motor Stability &amp; locomotion</u></b></p> <p>bodyCg02 Can run steadily for a distance without falling.</p> <p>bodyCg04 Can jump in place with two legs</p>

	<p>including : Grasp &amp; manipulation, Visual motor integration</p>	<p>Gross motor, <math>r=.86^{**}</math> Stability &amp; locomotion, <math>r=.82^{**}</math> Body coordination, <math>r=.86^{**}</math> Fine motor, <math>r=.90^{**}</math> Grasp &amp; manipulation, <math>r=.87^{**}</math> Visual motor integration, <math>r=.90^{**}</math></p> <p><b>Correlation between emotional competence domains and total scores: :</b></p> <p>Gross motor, <math>r=.91^{**}</math> Stability &amp; locomotion, <math>r=.87^{**}</math> Body coordination, <math>r=.89^{**}</math> Fine motor, <math>r=.99^{**}</math> Grasp &amp; manipulation, <math>r=.95^{**}</math> Visual motor integration, <math>r=.97^{**}</math></p>	<p>simultaneously.</p> <p>bodyCg06 Can climb up stairs without support.</p> <p>bodyBg10 Can jump forward continuously (e.g., rabbit jumps).</p> <p>bodyBg11 Can jump forward with two legs close together (e.g., a standing long jump).</p> <p>bodyCg08 Can walk down stairs without support.</p> <p>bodyBg13 Can skip forward continuously on one foot.</p> <p>bodyBg06 Can play a lattice game, including one-leg skipping and two-leg jumping forward continuously and alternately.</p> <p><b><u>Body coordination</u></b></p> <p>bodyCg01 Can throw a ball overarm using one arm.</p> <p>bodyCg03 Can move his/her body with rhythm when standing.</p> <p>bodyCg05 Can slide down a slide in a sitting position on his/her own.</p> <p>bodyBg08 Can ride a tricycle.</p> <p>bodyCg07 Can kick a ball (Can kick a ball away from him/her in a standing position).</p>
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			<p>bodyBg09 Can catch a big ball (e.g., a rubber ball) thrown by another person.</p> <p>bodyBg12 Can ride a bicycle with two auxiliary wheels.</p> <p>bodyBg01 Can throw a ball toward a target that is slightly higher than the child.</p> <p>bodyBg02 Can do a front roll.</p> <p>bodyBg03 Can dance or do exercises by following a whole dance or exercise song.</p> <p>bodyBg14 Can bounce a big ball (e.g., a rubber ball) continuously with one hand.</p> <p>bodyBg04 Can kick a ball toward a target (e.g., shooting a ball at a goal).</p> <p>bodyBg05 Can do sit-ups.</p> <p>bodyBg07 Can ride a bicycle.</p> <p><b><u>2.Fine motor</u></b></p> <p><b><u>Grasp &amp; manipulation</u></b></p> <p>bodyCf04 Can eat with a spoon.</p> <p>bodyCf05 Can turn thin pages of a storybook page by page.</p> <p>bodyCf01 Can take off a buttonless shirt (e.g., a t-shirt).</p> <p>bodyCf02 Can unbutton small</p>
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			<p>buttons on his/her clothes.</p> <p>bodyBf01 Can screw on a bottle cap.</p> <p>bodyBf03 Can put on short socks.</p> <p>bodyBf04 Can put on a buttonless shirt (e.g., a t-shirt) independently.</p> <p>bodyBf05 Can button the small buttons on clothes.</p> <p>bodyBf06 Can brush his/her teeth.</p> <p>bodyBf15 Can cut a specific shape (e.g., a circle) from a piece of paper.</p> <p>bodyBf10 Can insert a zipper pin into a slider and zip up.</p> <p>bodyBf12 Can eat using regular chopsticks (not learning chopsticks).</p> <p><b><u>Visual motor integration</u></b></p> <p>bodyCf03 Can draw a vertical line.</p> <p>bodyBf13 Can clap hands with rhythm (e.g., follow the music with clapping).</p> <p>bodyBf14 Can draw a horizontal line.</p> <p>bodyCf06 Can stack four or more cubic objects (e.g., building blocks or mahjong tiles).</p> <p>bodyCf07 Can gesture the number “2” using</p>
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			<p>his/her index finger and middle finger.</p> <p>bodyCf08 Can draw a circle.</p> <p>bodyBf02 Can gesture the number “3” using his/her index, middle, and ring fingers.</p> <p>bodyBf07 Can draw a square.</p> <p>bodyBf08 Can tie a knot.</p> <p>bodyBf09 Can draw a triangle.</p> <p>bodyBf16 Can fold a piece of paper to make a paper airplane.</p> <p>bodyBf11 Can tie a second knot after tying the first one (e.g., tie a tight knot).</p>
<b>Family</b>	<b>Family environment</b>	<p><b>Internal consistency:</b></p> <p>Environmental diversity, <math>\alpha=.56</math></p> <p>Learning materials, <math>\alpha=.74</math></p> <p>Learning stimulation, <math>\alpha=.79</math></p> <p>Parental responsiveness, <math>\alpha=.57</math></p> <p>Conditional discipline, <math>\alpha=.81</math></p> <p><b>Test-retest reliability:</b></p> <p>Environmental diversity, <math>r=.64^{**}</math></p> <p>Learning materials, <math>r=.59^{**}</math></p> <p>Learning stimulation, <math>r=.65^{**}</math></p> <p>Parental responsiveness, <math>r=.46^{**}</math></p> <p>Conditional discipline, <math>r=.78^{**}</math></p>	<p><b><u>Environmental diversity</u></b></p> <p>famC01 I take the child to visit families and friends or invite families and friends to visit our home.</p> <p>famC02 I take the child to visit or play outside (e.g., parks, markets, or public squares).</p> <p>fameviC01 I take the child to the bookstore or the library.</p> <p>famC08 I participate in activities suitable for children with the child (e.g. a parent-child joint activity).</p> <p><b><u>Learning materials</u></b></p> <p>famC03 I let the child play with objects which he/she</p>

			<p>can press down, grab, push, or pull (e.g., a ball or a baby walker).</p> <p>famC04 I let the child play with plush pillows, stuffed animals, or playset toys.</p> <p>famC05 I let the child play with objects which help him/her develop hand-eye coordination (e.g., a cup stacking set, a puzzle, or a set of soft building blocks).</p> <p>famC06 I let the child play with objects which help him/her learn colors, shapes, sizes, or numbers.</p> <p>famC07 I let the child play with objects which require fine motor skills (e.g., building blocks, play dough, clay, a string of beads, painting tools, snow-flake puzzles, or puzzles).</p> <p><b><u>Learning stimulation</u></b></p> <p>famC09 I teach the child names of various objects.</p> <p>famC10 I teach the child to say "please", "thank you", and "sorry".</p> <p>famC11 I teach the child learn spatial relationships (e.g., up and down, left and right, or front and back).</p>
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		<p>famC12 I help the child learn numbers.</p> <p>famC13 I help the child learn Chinese characters.</p> <p><b><u>Parental responsiveness</u></b></p> <p>famC14 Whenever the child makes a sound or speaks aloud, I respond with words.</p> <p>famC15 I kiss or hug the child.</p> <p>famC16 I talk to the child even when I am doing chores or work.</p> <p><b><u>Conditional discipline<sup>c</sup></u></b></p> <p>famC17 I scold the child if he/she is not obedient.</p> <p>famC18 When necessary, I discipline the child by limiting his/her actions (e.g., making him/her stand still or forbidding him/her to play with toys).</p> <p>famC19 When the child is out of control, I hit him/her.</p>
<b>Chinese parenting</b>	<p><b>Internal consistency:</b>  Discipline, <math>\alpha=.70</math>  Teaching, <math>\alpha=.72</math>  Achievement expectation, <math>\alpha=.73</math>  Shame, <math>\alpha=.74</math></p> <p><b>Test-retest reliability:</b>  Discipline, <math>r=.65^{***}</math>  Teaching, <math>r=.60^{***}</math>  Achievement expectation, <math>r=.62^{***}</math></p>	<p><b><u>Discipline</u></b></p> <p>famedu01 My strict disciplinary practice is something that the child will be thankful for in the future.</p> <p>famedu02 By scolding or criticizing the child, I am helping him/her improve.</p> <p>famedu03 The child should be punished by me if</p>

		Shame, $r=.64^{***}$	<p>he/she is not obedient.</p> <p><b><u>Teaching</u></b></p> <p>famedu04 The child should greet me without prompting when seeing me.</p> <p>famedu05 When I talk to the child, the child should look at me without being distracted.</p> <p><b><u>Achievement expectation</u></b></p> <p>famedu06 I should demand the child to become better and better, to help him/her improve.</p> <p>famedu07 I don't have a sense of achievement unless the child's learning performance is outstanding.</p> <p><b><u>Shame</u></b></p> <p>famedu08 I should tell the child that he/she should feel ashamed when behaving inappropriately.</p> <p>famedu09I should feel ashamed if the child is not on his/her best behavior when we go out.</p>
	<b>Life skill training</b>	<p><b>Internal consistency:</b> <math>\alpha=.75</math></p> <p><b>Test-retest reliability:</b> <math>r=.69^{***}</math></p>	<p>famedu10 I should adopt a firm approach in teaching the child to stop using his/her pacifier.</p> <p>famedu11 I should adopt a firm approach in making sure the child is fully potty trained.</p>
	<b>Parental</b>	<b>Internal consistency:</b>	<b><u>Father involvement</u></b>

	<p><b>involvement</b></p>	<p>Father involvement, <math>\alpha=.92</math>  Mother involvement, <math>\alpha=.93</math></p> <p><b>Test-retest reliability:</b>  Father involvement, <math>r=.80^{***}</math>  Mother involvement, <math>r=.79^{***}</math></p>	<p>atherinvo01 The child's father takes care of the child's basic needs such as food and clothing.</p> <p>fatherinvo02 The child's father teaches the child routine rules.</p> <p>fatherinvo03 The child's father helps the child with his/her learning activities.</p> <p>fatherinvo04 The child's father cares about and responds positively to the child.</p> <p>fatherinvo05 The child's father plays with the child.</p> <p><b><u>Mother involvement</u></b></p> <p>motherinvo01 The child's mother takes care of the child's basic needs such as food and clothing.</p> <p>motherinvo02 The child's mother teaches the child routine rules.</p> <p>motherinvo03 The child's mother helps the child with his/her learning activities.</p> <p>motherinvo04 The child's mother cares about and responds positively to the child.</p> <p>motherinvo05 The child's mother plays with</p>
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			the child.
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Note :

a : Wang, T. M. (2004). Manual of the Revised Comprehensive Developmental Inventory for Infants and Toddlers. Taipei, National Taiwan Normal University, Department of Special Education.

b : Folio, M.K., & Fewell, R.(2000). *Peabody Developmental Motor Scales : Examiner's Manual*. 2nd ed. Austin, Texas : PRO-ED.

c : When calculate the total score of family environment, the three questions of conditional discipline needs to be treated as the reversed items.

\* : p<0.05    \*\* : p<0.01    \*\*\* : p<0.001

## 2. Relative & Friend Questionnaire

The Relative & Friend Questionnaire includes the information on the primary caregiver (other than the parents) and the family domain questions. Please refer to the results of the Parent Questionnaire ( Table 2 ) for the scale/domain, reliability and validity, and variables of the family domain questions in the Relative & Friend Questionnaire.

## 3. Educarer Questionnaire

The result of the reliability and validity analysis of the Educarer Questionnaire is based on a child learning and educarer training project<sup>2</sup> by the Ministry of Education in 2016. A total number of 192 participants completed the questionnaires. Table 3 lists the scale/domain, reliability and validity, and variables of the child development questions and the family domain questions in the Educarer Questionnaire.

Table 3 : Scale/Domain, Reliability and Validity, and Variables of the Educarer Questionnaire

Scale/Domain	Reliability and Validity	Variables	
<b>Learning environment and quality</b>	<b>Internal consistency:</b> $\alpha=.88$  <b>Criterion validity:</b> Correlation between scores and ECERS-R <sup>a</sup> (20	act01	Reading stories to children (without looking at books)
		act02	Providing time and props for dramatic play (e.g., housekeeping props, dress up clothes, role play, toy figures)
		act04	Reading picture books with children

<sup>2</sup>Liaw, F. R., Shing, M. L., & Chang, J. W. (2016). The Child Learning and Educarer Training Project. Taipei, the Ministry of Education.



	<p>items ) scores, <math>r=.30^{***}</math></p>	<p>act05 Providing activities on counting, math/ number, color and shape</p> <p>act06 Providing activities on sequencing, sorting, comparing, and measuring.</p> <p>act13 Providing gross motor activities (e.g., ball play, running)</p> <p>act14 Providing fine-motor activities (e.g., cutting and pasting, folding papers, building small blocks, stringing beads, or molding clay)</p> <p>act15 Checking and taking actions to ensure the safety of the equipment and facilities before the onset of activities.</p> <p>act16 Providing opportunities for children to choose his/her own play activities.</p> <p>act17 Introducing logical relationships (e.g., cause and effect, same/different, sorting), using concrete experiences, and letting children explain their reasoning.</p> <p>env03 Providing various types of math/numeracy materials (e.g., materials for numbers, shapes, classification, matching, comparing; can be books, nursery rhymes, or teacher-made materials).</p> <p>env04 Providing various types of nature materials (e.g., insects, stones, shells, leaves, lifelike toy animals, plants, pets, fish tanks, etc.), and science equipment or materials (e.g., magnifiers, magnets, measuring cups, posters/pictures of animals and plants, etc.)</p> <p>env05 Providing various types of small building toys or materials (e.g., interlocking blocks, such as snowflakes, Legos, shape blocks, and accessories).</p> <p>env06 Providing a variety of dramatic play materials and space (e.g., hand puppets,</p>
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		<p>cloth, dress-up clothes, shoes, props, toy accessories, playset toys, and play space).</p> <p>env07 Providing various types of art materials (e.g., crayons, paint brushes, color pens, paints, tools for cutting and pasting, carpentry, 3-dimensional art materials, various types of paper, bottles and cans, art books/pictures, etc.)</p> <p>env08 Providing various types of materials for different fine motor skills (e.g., grabbing, twisting, cutting, sewing, piecing together, squeezing, stringing, nailing, etc.).</p> <p>env09 Providing many types of gross motor equipment for indoor or outdoor use (e.g., balance, swings, slides, climbing equipment, different sizes of balls, tricycles, bicycles, etc.).</p> <p>env10 Providing sufficient indoor space for play (to allow for multiple types of indoor play to occur at the same time), and materials are well stored and well organized.</p> <p>env11 Providing soft objects (e.g., plush pillows, cushions, stuffed animals, etc.) and cozy areas for relaxation.</p> <p>env12 Providing accessible space for privacy that can be used freely by the child (a separate space protected from intrusion by others).</p> <p>env13 Providing enough building blocks (e.g., wooden blocks, plastic blocks, soft blocks, large/small interlocking blocks, cardboard, paper boxes, etc.) and enough accessories (e.g., toy figures, animals, cars, and signs) for use and play.</p> <p>env14 Providing various types of toys or tools</p>
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		<p>for sand and water play (e.g., containers, shovels, spoons, pots and pans, toy animal molds, toy trucks, etc.).</p> <p>env15(R) Providing whole-group activities most of the day.</p> <p>inter01 I know the child's interests and abilities and use this information in my interaction with him/her or in designing activities for him/her.</p> <p>inter03(R) On busy and chaotic days, I am more irritable and less patient if the child misbehaves or gets into trouble.</p> <p>inter04 When the child is involved in play, I pay attention to what he/she is doing, and give help when needed (e.g., providing materials, helping the child complete a difficult task).</p> <p>inter05 I listen closely to what the child says and respond to him/her positively.</p> <p>inter06 When speaking to the child, I elaborate on his/her words or encourage him/her to say more.</p> <p>inter07 I talk to the child about things or events that happened in the past (e.g., a trip we went on together or how it was on his/her first day at the preschool/nursery care center/nanny's residence).</p> <p>inter08 I help the child communicate or interact with other children (either initiated by the child or initiated by other children.)</p> <p>inter09 When the child run into conflict with other child(ren), I help him/her understand other people's perspectives.</p>
<p><b>Chinese parenting</b></p>	<p><b>Internal consistency:</b> <math>\alpha=.90</math></p>	<p>faith01 The adult's scolding or criticism helps the child improve.</p> <p>faith02 The child should be punished when he/she is disobedient.</p>

		<p>faith03 The adult should tell the child to feel ashamed when he/she misbehaves.</p> <p>faith04 An adult should feel ashamed if the child misbehaves when they go out.</p> <p>faith05 The adult should teach the child to get better and better, as a way to help the child improve.</p> <p>faith06 The child's high academic achievement is the basis for the adult 's sense of accomplishment.</p>
<b>Educarer-child relationship</b>	<b>Internal consistency:</b> $\alpha=.60$	<p>relation01 When I talk to the child, the child should look at me attentively.</p> <p>relation02 When I point out the child's mistakes, he/she must not talk back.</p> <p>relation03 When I scold the child, he/she must not wear a long face (or give a dirty look).</p> <p>relation04 The child should obey all the rules I set.</p> <p>relation05 All my demands are in the best interest of the child, so the child should repay me when he/she grows up.</p> <p>relation06 The child should be thankful for what I have done for him/her.</p>
<b>Educarer-child interaction</b>	<b>Internal consistency:</b> $\alpha=.82$	<p>inter01 I know the child's interests and abilities and use this information in my interaction with him/her or in designing activities for him/her.</p> <p>inter02 I change my schedule to accommodate the needs of the child.</p> <p>inter03(R) On busy and chaotic days, I am more irritable and less patient if the child misbehaves or gets into trouble.</p> <p>inter04 When the child is involved in play, I pay attention to what he/she is doing, and give help when needed (e.g., providing materials, helping the child complete a difficult task).</p> <p>inter05 I listen closely to what the child says</p>

		<p>and respond to him/her positively.</p> <p>inter06 When speaking to the child, I elaborate on his/her words or encourage him/her to say more.</p> <p>inter07 I talk to the child about things or events that happened in the past (e.g., a trip we went on together or how it was on his/her first day at the preschool/nursery care center/nanny's residence).</p> <p>inter08 I help the child communicate or interact with other children (either initiated by the child or initiated by other children.)</p> <p>inter09 When the child run into conflict with other child(ren), I help him/her understand other people's perspectives.</p> <p>inter10 I can teach the child well.</p>
<b>Parent-educarer relationship</b>	<b>Internal consistency:</b> $\alpha=.87$	<p>parents01 The child's parents care about me.</p> <p>parents02 The child's parent lets me know that I am a good educarer/nanny.</p> <p>parents03 The child's parent appreciates the efforts I put in to care and educate the child.</p> <p>parents04 The child's parent provides me with information regarding the child's learning at home.</p> <p>parents05 The child's parents accept my suggestions regarding child rearing. .</p>

Note :

a : Harms, T., Clifford, R. M., & Cryer, D. (2006). The Early Childhood Environment Rating Scale-Revised, (S. F. Chen & T. W. Kuo-Li, Trans.). Taipei: Psychology.

(R) : reversed item

\*\*\* $p<0.001$