

New Frontiers of Educational Research

Xin Liu

Xiumin Hong

Wanzhen Feng

Xiaowei Li

Xinghua Wang

Yuejuan Pan

Research on the Development and Education of 0–3-Year-Old Children in China

 Springer

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Xin Liu · Xiumin Hong · Wanzhen Feng ·
Xiaowei Li · Xinghua Wang · Yuejuan Pan

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Xin Liu
Faculty of Education
Beijing Normal University
Beijing, China

Xiumin Hong
Faculty of Education
Beijing Normal University
Beijing, China

Wanzhen Feng
Faculty of Education
Beijing Normal University
Beijing, China

Xiaowei Li
Faculty of Education
Beijing Normal University
Beijing, China

Xinghua Wang
Faculty of Education
Beijing Normal University
Beijing, China

Yuejuan Pan
Faculty of Education
Beijing Normal University
Beijing, China

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Preface

The first 3 years is the starting point of children's development and learning, when infants and toddlers experience the most rapid physical, cognitive, language, emotional, and social development of their lives. This period lays the foundation for lifelong health, well-being, and success. In recent years, research on neuroscience, psychology, pedagogy, and other disciplines has confirmed the importance of the development and education of infants and toddlers. Promoting the development of infants and toddlers and improving the quality of their care and education have gradually become one of the focuses of early childhood education in many countries around the world.

Recently, China has attached great importance to the development and education of infants and toddlers. In 2001, the State Council issued the *Outline of Child development in China (2001–2010)*, which first proposed to “develop early education for children aged 0–3.” In 2010, the *Outline of National Medium-and Long-Term Program for Education Reform and Development (2010–2020)* stressed that “attention should be paid to the education of infants and toddlers,” marking that the education of infants and toddlers was officially incorporated into the national education service system in China.

Scientific research is the forerunner of appropriate education. The promotion and educational guidance for early childhood development should be age-appropriate and follow the rules of infants and toddlers' physical and mental development. Previous research on infants and toddlers' mental development and its influencing factors can provide scientific bases for childcare providers and parents to comprehensively understand the age characteristics and individual differences of infants and toddlers, meet their development needs, create an appropriate environment, and develop appropriate curricula for them.

Although great progress has been made in the research on the development and education of children aged 3–6 in China, there are still few empirical studies on the development and education of infants and toddlers, which has attracted attention gradually in recent years.

This book is based on numerous studies examining the development and education of infants and toddlers conducted by many professors and their graduate students in the Institute of Early Childhood Education at Beijing Normal University. Its contents primarily include the characteristics of the physical and mental development of infants and toddlers in China, family environment and parenting status, the impact of family on infants and toddlers' development, and the impact of national policies on infants and toddlers' families and their development. This book has greatly enriched the basic research on the development and education of infants and toddlers in China.

The book is divided into the following three parts:

Part I (Chaps. 1–6): The Developmental Status of Infants and Toddlers and Its Influencing Factors.

In this part, based on the existing research, comprehensive methods, such as questionnaire, testing, and observation, were used with 2- and 3-year-old children and their parents. An observation and evaluation tool suitable for assessing the physical and mental development of Chinese infants and toddlers aged 2–3 was developed. By using this tool, the developmental status of 145 2- and 3-year-old children from four districts in Beijing was evaluated in a real and natural play situation, and the developmental status and characteristics of 2- and 3-year-old children in five domains—motor, cognition, language, emotion, and social adaptation—were preliminarily investigated, and the factors affecting the development of 2- and 3-year-old children were explored. To some extent, this study has promoted the professional level of infants and toddlers development evaluation in China, and provided an important basis for research on the developmental status and influencing factors of 2- and 3-year-old children in large samples in China in the future.

Part II (Chaps. 7–9): Family Environment and Infants and Toddlers' Development.

In this part, we investigated the characteristics of grandparent–parent co-parenting and its influence on infants' emotional adjustment, and explored the mechanism of infants and toddlers temperament in it. In addition, we also examined the early parenting concept, the current situation of family education environment and the characteristics of learning and development related to infants and toddlers from the perspectives of home literacy environment and family art education, and analyzed and discussed the impact of family education environment on infants and toddlers' early literacy and artistic development. Through the above-related research, we hope to provide targeted advice for families to better prepare suitable parenting environment for infants and toddlers, change inappropriate parenting concepts, and further improve parenting ability.

Part III (Chaps. 10–12): Policies and Challenges.

In this part, we investigated and forecasted the growth trends of 0–3 years old population under the universal two-child policy in Beijing. We also conducted an in-depth investigation and analysis of the characteristics of second-child family rearing and sibling relationship in urban families and the problems faced by them. These basic studies provide us with implications for understanding national conditions, analyzing current situation, and meeting challenges.

Beijing, China

Xin Liu

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Part I
The Developmental Status of Infants
and Toddlers and Its Influencing
Factors

Chapter 1

Research Contents and Methods of Development in 2- and 3-Year-Old Children



1.1 Research Background

The period from 0 to 3 year-old is the start of life, the starting point of individual development, a key period for the children's physical growth, development in motor, cognition, language, emotion, and social adaptation, and also the elementary and most fundamental stage of education. In recent years, research on neuroscience, psychology, pedagogy, and other disciplines has confirmed the importance of the development and education of infants and toddlers aged 0–3 years. The early education of infants and toddlers aged 0–3 years has attracted more and more attention from the international community, and various actions have been taken in the world.

For example, the “Head Start” in the USA, which began in 1965, provides health-care services for women before and during pregnancy and after delivery, and also provides information about infant nutrition and early education for infants and toddlers in and outside the family. Afterward, the U.S. Federal Government constantly increased investment in children's early education and attached special importance to the early intervention project for poor children, so as to promote equal access to education, such as Project Head Start and Early Head Start, which mainly provided services for preschool children of low-income families, including babies and toddlers. New Zealand has been tracking the growth of infants and toddlers since 1972. In 1993, “Puru Kate Plan”—the national plan for development and education of infants and toddlers aged 0–3 was activated. In the report titled *Education for the 21st Century*, the Ministry of Education of New Zealand pointed out that “education must start from birth”. The Early Year Foundation Stage (EYFS) of the UK was incorporated into the legal system in 2008.

In recent years, China has also gradually attached importance to the early development and education of infants and toddlers aged 0–3. In 2001, the State Council issued the *Outline of Child development in China (2001–2010)*, which explicitly proposed to “develop early education for children aged 0–3” for the first time. In 2010, in the development tasks of preschool education in the *Outline of National Medium-*

and Long-Term Program for Education Reform and Development (2010–2020), it was stressed that “attention should be paid to the education of infants and toddlers aged 0–3”, which marked that the education of infants and toddlers aged 0–3 was officially incorporated into the national education service system. In December 2012, the Ministry of Education also issued a document to carry out the experimental early education for infants and toddlers aged 0–3 in 14 regions, including Shanghai and Beijing. As a result, the early education for infants and toddlers aged 0–3 in China has gradually entered a golden age of vigorous development. It is in such a context that early education guidance services for infants and toddlers aged 0–3 and related institutions emerged and launched the practical exploration of early education for infants and toddlers aged 0–3.

Scientific research is the forerunner of appropriate education, and the promotion and educational guidance for early childhood development should follow the age characteristics and rules of the infants’ physical and mental development. Previous research on infants’ mental development and its influencing factors can provide scientific bases for childcare and education personnel and parents to comprehensively understand the age characteristics and individual differences of infants, meet the development needs of infants, and create an appropriate childcare and education environment and develop appropriate courses. In order to deeply understand the physical and mental development characteristics and influencing factors of infants and toddlers aged 0–3 in China, it is indispensable to study the evaluation on development of infants and toddlers aged 0–3. The purpose of evaluation on infant development is to understand and analyze the development status of infants and toddlers in time, explore the relevant factors affecting the infant development, and provide a basis for actively promoting education and research suitable for infants and toddlers and promoting the overall development of infants and toddlers.

Although great progress has been made in the research on the development and education of children aged 3–6 in China, there are still few basic studies on the development and education of infants and toddlers aged 0–3, which has gradually attracted attention in recent years. In recent years, Chinese early childhood educators and researchers have realized the important value of evaluation on infant development and made active exploration in this field. However, there is still a big gap between China and foreign countries in the research on evaluation on development of infants and toddlers aged 0–3. Based on the shortcomings of previous studies, this study aims to explore and study a development evaluation tool suitable for infants and toddlers aged 0–3 in China, and further understand and explore the development status and influencing factors of infants and toddlers in China.

1.2 Literature Review

By reviewing the previous evaluation tools and studies on development of infants and toddlers aged 0–3, it can be found that the previous studies in this field mainly have the following deficiencies:

First, in terms of testing and evaluation subjects, there are many measurement tools for the development of children over 3-year old, but few for the development of infants and toddlers aged 0–3.

Second, in terms of evaluation tools, most of the previous evaluation tools for infants and toddlers aged 0–3 are translated from evaluation scales of foreign countries and promoted after establishing models based on the Chinese people. These evaluation tools better draw lessons from the research achievements of western countries, but because of influence of China's cultural environment, geographical environment, and living environment, the physical and mental development of Chinese infants and toddlers has its uniqueness. Thus, the measurement validity of the scales introduced from foreign countries, which are later revised into Chinese models, is thought-provoking and doubtful. Therefore, there is an urgent need to develop a set of localized testing tools suitable for the development characteristics of Chinese infants and toddlers.

Third, in terms of evaluation domains, most of the previous studies evaluate the development of infants and toddlers in such domains as motor development, cognitive development, language development, emotional development, and social adaptation, but there is limited research on comprehensive evaluation on the development of several major domains of infants and toddlers.

Fourth, in terms of the evaluation subject, the main implementers of the evaluation on infant development in China are still researchers, and the awareness of parents to participate in the evaluation of infant development is very weak. The dynamic development process of interaction between children and environmental systems and the development evaluation content determines the diversification of evaluation subjects, so only information collected through the diversified evaluation subjects can reflect the most authentic development status of infants and toddlers. Therefore, the infant development evaluation should be made from a relational perspective, and pay full attention to the dynamic changes of various relationships, including interactions among parents, teachers, researchers, peers, and individuals. In the infant development evaluation process, parents, infants, and toddlers may participate as subjects. The evaluation information provided by parents may become important resources in the infant development evaluation, because parents have a more authentic and comprehensive understanding of various aspects of the infant development.

Fifth, in terms of evaluation context, the traditional evaluation method attaches importance to the evaluation in the laboratory environment. However, more and more researchers emphasize the evaluation on child development in the real play context, because the real situation is more helpful to induce the highest development level and ability performance of children.

Based on the deficiencies of previous research, this study will expand the research on the infant development evaluation in the following aspects: First, introducing and revising a comprehensive development evaluation tool in the domains of motor, cognition, language, emotion, and social adaptation that are applicable to the evaluation and research of infants and toddlers aged 2–3 in China; second, combining the parents' reports with the infant measurement and observation to objectively evaluate the development status of infants and toddlers in several domains from a multi-

dimensional perspective; third, localizing the play-based evaluation to explore the evaluation tools and methods for the development of 2- and 3-year-old children in multiple domains in the natural context.

1.3 Research Purpose and Tasks

The purpose of this study is to explore and study the development evaluation tools suitable for 2- and 3-year-old children in China, and based on this, to comprehensively understand the development status and influencing factors of 2- and 3-year-old children in several major domains, so as to enhance the professional level of infant development evaluation in China, and provide a basis for the investigations and research on the development status of 2- and 3-year-old children in large samples in China in the future.

Specifically, one of the main tasks of this study is to develop an observation and evaluation tool suitable for the development characteristics of 2- and 3-year-old children in China, so as to provide a suitable evaluation tool for early childhood educators and early intervention workers to comprehensively understand the development process and age characteristics of infants and toddlers in five domains—motor, cognition, language, emotional, and social adaptation in China. This can provide an important basis for the investigations and research on the development status of 2- and 3-year-old children in large samples in China in the future.

Another major task of this study is to test the 2- and 3-year-old children with the help of the developed evaluation tool for infant development, learn and analyze the basic development characteristics and development status of 2- and 3-year-old children in five domains—motor, cognition, language, emotional, and social adaptation, explore the related factors affecting the infant development, so as to provide valuable reference and suggestions for comprehensively and objectively evaluating the quality of early education for 2- and 3-year-old children, and putting forward educational countermeasures for promoting the development of infants and toddlers with target.

1.4 Research Subjects

1.4.1 Sampling

The survey in this study focused on the urban area of Beijing and the surrounding suburbs, and purposive sampling was mainly adopted. In order to improve the representativeness and universality of samples, this study selects samples based on the following three criteria: first, according to the division of Beijing municipal administrative region, four districts were selected, including two in the urban area, one in the

Table 1.1 Distribution of infant samples

Category	Sample size	Percentage (%)
Male	69	47.6
Female	76	52.4
30-month-old or younger	27	18.6
30-month-old or older	118	81.4
Total	145	100

suburbs, and one in the outer suburbs. Second, according to the different nature of early childhood education institutions, two kindergartens and three early education agencies were selected. Third, according to the different levels of samples receiving early education, the infants and toddlers and their parents are divided into two groups: infants and toddlers who have received early education and their parents, and those who have not received early education and their parents.

1.4.2 Samples

The samples are from Haidian District and Chaoyang District in the urban area of Beijing, Daxing District in the suburbs, and Shunyi District in the outer suburbs.

The test subjects are 2- and 3-year-old children.

The observation subjects are 2- and 3-year-old children and their parents.

The subjects of questionnaire survey are 2- and 3-year-old children and their parents (Table 1.1).

1.5 Research Methods

In this study, questionnaire, test, and observation methods were employed to collect relevant information and data about infant development.

1.5.1 Questionnaire Method

Questionnaire method is a research method that collects data by asking questions in writing so as to understand the views and opinions of the subjects on a certain phenomenon or problem (Pei 2000).

In this study, the questionnaire method is mainly used in three domains, namely, motor development, emotional development, and social adaptation. It is used to understand the basic family situation of infants and toddlers, and to measure variables such as emotional development, social adaptation, temperament, co-parenting by

grandparents and parents, and parent–child interaction. Except the questionnaire for the motor development in which the trained experimenters visit the parents to ask questions about motor development of their infants and toddlers through face-to-face interview, the emotional development, social adaptation, temperament, and co-parenting by grandparents and parents of infants and toddlers are all learned by giving answers in writing.

After contacting the kindergartens, early education agencies, or local street offices, the researchers distributed informed consents to parents of infants and toddlers through their teachers in the kindergartens or early education agencies. With the signature of the parents, the professionally trained experimenters explained the research purpose, method of answering the questionnaire, and the matters needing attention to the teachers. The teachers and the experimenters explained the matters needing attention to fill in the questionnaire to the parents. The parents were required to fill in the questionnaires on the spot or hand them to the teachers or the experimenters within 2 days. Finally, the questionnaires were collected and sorted out by the experimenters.

1.5.2 Test Method

Test method refers to the method of measuring some important characteristics of the evaluated subjects with the help of certain measuring tools so as to collect relevant evaluation information (Zhang 2014).

In this study, the test method is mainly used to measure the motor development, cognitive development, language development, and emotional development of 2- and 3-year-old children. This test takes the form of one-to-one test. Throughout this test, the trained experimenters test the motor ability, cognitive ability, language ability, emotion recognition ability, and emotional comprehension ability of 2- and 3-year-old children according to the test content under the items, testing and scoring requirements, and grades the performance of the infants and toddlers, which is greatly objective.

Based on the Transdisciplinary Play-Based Assessment (TPBA) established by Professor Linder from the University of Denver, USA, this study is aimed to evaluate the development of infants and toddlers in various aspects by observing their performance in play context (Lander 2008). Different from the traditional test method, the test in this study is based on play. The researcher created corresponding play environment for infants and toddlers, and the experimenters assessed the performance of infants and toddlers in play. Infants and toddlers' performances in play are its most natural and real. Researchers evaluated the development level of infants and toddlers by observing their performance in play, and thus the ecological validity was effectively guaranteed.

1.5.3 Observation Method

Observation method is one of the most basic methods to study the rule and characteristics of children's psychological development. Since children's psychological activities have prominent externality, their psychological activities can be learned by observing their external behaviors (Wen 2015). At present, there is a growing opposition to laboratory evaluation on infants and toddlers, and in the evaluation on infants and toddlers, more stress is increasingly laid on the observation-based evaluation in the real situation.

In this study, the observation method is mainly used in the cognitive development, emotional development, and social adaptation of 2- and 3-year-old children to measure their cognitive development level, emotion adjustment ability, social adaptability, parent-child interaction, and other variables of 2- and 3-year-old children in the real situation. By observing the cognitive development level, emotion adjustment ability, environmental adaptation, stranger adaptation, companion adaptation, and parent-child interaction process of 2- and 3-year-old children, the experimenters collect the behavioral variables of infant development in relevant aspects. These results and questionnaire survey results confirm and support each other, ensuring the ecological validity of the study. Specific observation methods vary from domain to domain and will be described in detail in the research methods of the relevant chapter below.

1.6 Research Tools

In this study, the research methods and tools for the five domains—motor development, cognitive development, language development, emotional development, and social adaptation of 2- and 3-year-old children are summarized as follows (Table 1.2).

1.7 Data Processing and Analysis

The data obtained through questionnaire, test, and observation methods were analyzed by SPSS 19.0, Amos 22.0, and other statistical analysis software. The specific analysis methods include descriptive statistical method, independent-samples T-test, one-way analysis of variance, correlation analysis, multiple regression analysis, path analysis, and so on.

* in this book has the same meaning: * means significance at the level of 0.05; ** means significance at the level of 0.01; *** means significance at the level of 0.001.

Table 1.2 Research tools for various domains

Development domain	Research method	Research tool	Sub-domain
Motor development	Questionnaire method	Self-prepared questionnaire	Feeding situation, breast milk stopping time, self-care situation, etc.
	Test method	Self-prepared scale of <i>Evaluation on motor development of 2- and 3-year-old children</i>	Fine motor: functional hand skills, object manipulation, object matching, etc. Gross motor: body posture, movement, object manipulation, etc.
	Test method	Self-prepared scale of <i>Evaluation on cognitive development of 2- and 3-year-old children</i>	Symbol and representation, problem-solving, one-to-one correspondence, working memory, reversal classification and matching, attention and participation, pattern cognition, exploration and construction, etc.
Language development	Observation method	Observation table for <i>Evaluation on cognitive development of 2- and 3-year-old children</i>	Symbolization and representation, problem-solving, one-to-one correspondence, working memory, reversal classification and matching, attention and participation, pattern cognition, exploration and construction, etc.
	Test method	Heep Hong Society's Child Development Assessment Form Language Sub-scale	Language expression, language understanding
Emotional development	Questionnaire method	Bayley Scales of Infant Development III Social Emotion Questionnaire	Sensory processing, early social emotional development, etc.
	Test method	Face recognition test	Emotion recognition

(continued)