

<http://heanoti.com/index.php/hn>

RESEARCH ARTICLE

URL of this article: <http://heanoti.com/index.php/hn/article/view/hn20224>

Profiles of Early Childhood Education Program and Children Attending Them

Lisa Pangemanan^{1(CA)}, Mira Irmawati², Irwanto³, Ahmad Suryawan⁴^{1(CA)}Department of Paediatrics, Faculty of Medicine, Airlangga University, Indonesia; lisa-p@ukwms.ac.id
(Corresponding Author)²Department of Paediatrics, Faculty of Medicine, Airlangga University, Indonesia³Department of Paediatrics, Faculty of Medicine, Airlangga University, Indonesia⁴Department of Paediatrics, Faculty of Medicine, Airlangga University, Indonesia

ABSTRACT

Early childhood education (ECE) in Indonesia is growing with many variations in programs among the ECE. Children's profile in those places were varied in terms of growth and development. This research aims to study the profiles in ECE in terms of program's variation, growth and development of children attend it. This research uses a cross-sectional study was done in 3 ECE centers in Surabaya, which are varied in total effective hours, the use of language, and teacher-student ratio. The growth outcome was assessed by anthropometric measurement. The developmental outcome was assessed using Denver II. Statistical analysis was done by Kruskal-Wallis test. A total of 52 children from three ECE centers were enrolled. Program variations among 3 ECE were as follow: total effective hours per day (3, 2.5 and 3.5), the use of language (1, 1, and 2); and teacher-student ratio (1:7, 1:19, 1:15) respectively. Anthropometric measurements of those ECE were as follow: body weight in kg (16.9 (SD 5.10); 17 (SD 2.46); 17.9 (SD 4.62) ($p \geq 0.05$)); body height in cm (100.7 (SD 5.72); 105 (SD 5.89); 104.7 (SD 6.31) ($p \geq 0.05$)); head circumference in cm (49.5 (SD 1.75); 50.5 (SD 1.74); 50.6 (SD 1.59) ($p \geq 0.05$)) respectively. Suspected developmental delays were 11, 9, 11 children ($p \geq 0.05$) respectively. Development problem found was mainly in language and personal social. There are program's variation among ECE but the growth and development profiles of children attend it were similar.

Keywords: Variation, ECE program, Growth, Development

INTRODUCTION**Background**

Early childhood education programs have been provided to combat poverty's effects on children's development and educational progress, either in the short- or long-term.⁽¹⁾ In the short-term, a specifically designed ECE have been shown to produce immediate effects on IQ and achievement of about 0.5 standard deviations, equivalent to about 8 IQ points, while in the ordinary child care program the effects was similar, but smaller.² In the long-term, ECE is found to produce persistent effects on achievement and academic success, improve educational and health-related outcomes, and promote child and adolescent mental health⁽²⁻⁴⁾. It is also found from cost-benefit analysis that the economic return from providing ECE in poverty far exceeds the costs.²

Three types of preschool classroom experiences that was believed to be important when working with children who are getting ready for kindergarten: (1) types of teacher-child interaction, (2) children's learning environment, and (3) types of learning opportunities. Each of these dimensions was made up of several factors. There was variation among the factors that make up each dimension, with differences between and within center type⁽⁵⁾.

Bantul area reported that the number of ECE center exceed national target, some of them not yet registered. To ensure ECE center quality, many things have to be done such as providing qualified teacher, establish certain standard for all ECE center, empowerment of stakeholder⁽⁶⁾. Psychosocial stimulation, participation in early childhood education and nutritional status based on the height index for age had a positive and significant effect on cognitive development of the preschool children⁽⁷⁾. Variations in the quality or developmental appropriateness of programs and children attend it can account for differences in effectiveness⁽⁸⁻⁹⁾.

METHODS

A cross-sectional study was done in 3 ECE centers in Surabaya, which are varied in total effective hours, the use of language, and teacher-student ratio. Children age 2-4 years old with informed consent from parents were included. The growth outcome was assessed by anthropometric measurement using Keputusan Menteri Kesehatan Republik Indonesia Nomor 1995/Menkes/SK/XII/2010 about anthropometric standard for children nutritional status assessment⁽¹⁰⁾. The developmental outcome was assessed using Denver II⁽¹¹⁾. Statistical analysis was done by Kruskal-Wallis test with significance level <0.05. Ethical clearance number 459/EC/KEPK/FKUA/2016.

RESULTS

Fifty-two children from 3 different ECE centers were included in this study. Program's variation in term of total effective hours per day, use of language and teachers-students ratio were recorded (table 1).

Table 1. Subject's characteristics

	A (n=23)	B (n=14)	C (n=15)	
Program's variation				
Total effective hours per day	3.0	2.5	3.5	
Use of language	1	1	2	
Teachers-students ratio	1:7	1:19	1:15	
Weight for age (WAZ)				p =0.62
Severe underweight	1 (4.3)	0 (0.0)	0 (0.0)	
Underweight	1 (4.3)	1 (7.1)	0 (0.0)	
Normal	20 (87.1)	12 (85.8)	13 (86.7)	
Overweight	1 (4.3)	1 (7.1)	2 (13.3)	
Height for age (HAZ)				p =0.42
Severe stunted	1 (4.3)	2 (14.2)	0 (0.0)	
Stunted	1 (4.3)	0 (0.0)	0 (0.0)	
Normal	20 (87.1)	12 (85.8)	15 (100.0)	
Tall	1 (4.3)	0 (0.0)	0 (0.0)	
Weight for height (WHZ)				p =0.86
Severe wasted	1 (4.3)	0 (0.0)	0 (0.0)	
Wasted	1 (4.3)	0 (0.0)	0 (0.0)	
Normal	17 (74.0)	13 (92.9)	12 (80.0)	
Obese	4 (17.4)	1 (7.1)	3 (20.0)	
Head circumference (HCAZ)				p =1.00
Normal	23 (100)	14 (100)	15 (100)	

Growth outcome was assessed using Keputusan Menteri Kesehatan Republik Indonesia Nomor 1995/Menkes/SK/XII/2010 about anthropometric standard for children nutritional status assessment⁽¹⁰⁾. Developmental statuses was assessed using Denver II⁽¹¹⁾ (table 2) and did not significantly different between those 3 different ECE centers (table 3).

Table 2. Developmental outcome

Domain	A			B			C			p-value
	Pass	Caution	Failed	Pass	Caution	Failed	Pass	Caution	Failed	
Gross motor	20 (87.0%)	2 (8.7%)	1 (4.3%)	12 (85.7%)	0 (0.0%)	2 (14.3%)	13 (86.7%)	1 (6.7%)	1 (6.7%)	p=0.977
Language	11 (47.8%)	5 (21.7%)	7 (30.4%)	6 (42.9%)	1 (7.1%)	7 (50.0%)	5 (33.3%)	1 (6.7%)	9 (60.0%)	p=0.353
Fine motor	14 (60.9%)	5 (21.7%)	4 (17.4%)	12 (85.7%)	0 (0.0%)	2 (14.3%)	13 (86.7%)	0 (0.0%)	2 (25.0%)	p=0.193
Social personal	15 (65.2%)	1 (4.3%)	7 (30.4%)	11 (78.6%)	0 (0.0%)	3 (21.4%)	10 (66.7%)	1 (6.7%)	4 (26.7%)	p=0.722

Table 3. Denver II interpretation

Outcome	Frequency n (%)			p-value
	A	B	C	
Suspect	11 (47.8)	9 (64.3)	11 (73.3)	p=0.28
Normal	12 (52.2)	5 (35.7)	4 (26.7)	

DISCUSSION

Registered early childhood centers in Indonesia are 221.906⁽¹²⁾. In this study, 3 ECE centers were selected to analyze the program's variation and the growth and development's profiles of children attend it. The ideal teachers-student ratio for children below 2 years-old is 1:4, for children 2-4 years-old is 1:8, for children 4-6 years old is 1:15⁽¹³⁾. Head Start programs available in USA specify that classes for 3 years can only have no more than 20 children⁽¹⁴⁾. In this study only 1 ECE center meet the requirement in terms of teachers-student ratio and the other 2 were far below the expected ratio. In terms of children available in class, two of the meet the criteria but those two does not meet the teachers-student ratio. Combine together, none of the ECE centers included in this study meet the 2 criteria.

Total effective hours per day for children below 2 years-old is at least once a week, 120 minute each, for children 2-4 years-old is at least twice a week, 180 minute each, for children 4-6 years old is at least five times a week, 180 minute each⁽¹³⁾. There are 2 types of kindergarten program in terms of time spent in school, half day (generally 2-3 hours) and full day (typically about 6 hours)⁽¹⁵⁾. In this study all the ECE centers was different in term of effective hours per day but none of the exceed 3 hours per day.

Aspect that should be nurtured are moral and religion, physical-motoric, cognitive, language, emotional and art. Everyday learning process should include opening, main topic and closing.¹³ There is no rule about how many languages that can be used in ECE center. Language skills in young bilingual children are highly varied as a result of the variability in their language experience⁽¹⁶⁾. Studies have shown that bilingual children have advantages in terms of understanding the communication needs of their conversational partners. Young bilingual children are sensitive to the fact that they cannot understand someone who speaks a foreign language earlier than monolingual children⁽¹⁷⁾. In this study, 2 ECE centers used 1 language and 1 used 2 languages.

Growth outcome is one of the goals of attending ECE center. Growth outcome should be suitable according to age⁽¹³⁾. In this study, growth outcome did not different statistically between 3 ECE centers with normal results as majority.

Effective programs were characterized by combinations of most of the following elements: (1) small class sizes with low ratios of children to teachers; (2) teachers who received support to reflect on and improve their teaching practices; (3) a concentrated or long-lasting intervention; (4) ongoing, child-focused communication between home and school; and (5) use of some curriculum content and classroom processes that are similar to what children encounter in traditional schooling. Early childhood intervention programs are designed to mitigate the factors that place children at risk of poor outcome⁽¹⁾. Full day school show better result compare to half day in children from high risk group but this advantage appears to fade over time. A difference in the numbers of hours' children spend in kindergarten cannot compensate for differences that may exist in the nature of their experience and the preparation and effectiveness of their teachers⁽¹⁵⁾. Preschool center quality was not reliably related to socioemotional outcomes⁽¹⁸⁾. In this study, developmental outcome did not different statistically between 3 ECE centers which all of them are half day school.

In this study, the outcome measured only reflect developmental profile of children attend it. A systematic review found that most ECE programs can produce large short-term benefits for children on intelligence quotient (IQ) and sizeable long-term effects on school achievement, grade retention, placement in special education, and social adjustment, but not all programs produce these benefits, perhaps because of differences in quality and funding across programs. Therefore, the quality of the ECE services provided is important for children development but also affected by the baseline characteristic of children attending it⁽¹⁸⁾.

CONCLUSION

There is program's variation among ECE but the growth and development profiles of children attend it were similar. Long-term and larger study still needed to know the long-term effect of ECE variation on child growth and development. Early childhood education programs still play an important role in national education program, and the government policy implementation is a must to provide qualified ECE program and services for all.

REFERENCES

1. Campbell FA, Ramcy CT, Pungelo E. Early Childhood Education: Young Adult Outcomes from the Abecedarian Project. *Appl Dev Sci*. 2002;6(1):42-57.
2. Barnett WS. Long-term Cognitive and Academic Effects of Early Childhood Education on Children in Poverty. *Prev Med*. 1998;27(2):204-7.
3. Hahn RA, Barnett WS, Knopf JA. Early Childhood Education to Promote Health Equity: A Community Guide Systematic Review. *J Public Health Manag Pract*. 2016;22(5):E1-8.
4. Baker-Henningham H. The Role of Early Childhood Education Programmes in The Promotion of Child and Adolescent Mental Health in Low and Middle-income Countries. *Int J Epidemiol*. 2014;43(2):407-33.
5. Lara-Cinisomo S, Fuligni AS, Daugherty L. A Qualitative Study of Early Childhood Educator's Beliefs about Key Preschool Classroom Experiences. *ECRP*. 2009;11(1):5-7.
6. Dikpora Provinsi DIY. Increasing the number of PAUD in Bantul Regency (Peningkatan jumlah PAUD di Kabupaten Bantul) [Internet]. Dikpora Provinsi daerah Istimewa Yogyakarta. 2014 [Cited 2016 Sep 14]. Available from: http://www.pendidikan-diy.go.id/dinas_v4/?view=v_berita&id_sub=3375
7. Warsito O, Khomsan A, Anwar F. Relationship between Nutritional Status, Psychosocial Stimulation and Cognitive Development in Preschool Children in Indonesia. *Nutr Res Pract*. 2012;6(5):451-7.
8. Frede EC. The Role of Program Quality in Producing Early Childhood Program Benefit. *Future Child*. 1995;5(3):115-32.
9. West J, Collins M, Germino-Hausken E. Profile of Preschool Children's Child Care and Early Education Program Participation. Washington DC U.S. Dept. of Education, Office of Educational Research and Improvement. 1993. Available from: <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=93133>.
10. Kemenkes RI. Decree of the Minister of Health of the Republic of Indonesia Number: 1995 / MENKES / SK / XII / 2010 on Anthropometric Standards for the Assessment of Nutritional Status of Children (Keputusan Menteri Kesehatan Republik Indonesia Nomor: 1995/MENKES/SK/XII/2010 tentang Standar Antropometri Penilaian Status Gizi Anak. Jakarta: Kementerian Kesehatan Republik Indonesia; 2011.
11. Frankenburg WK. Denver II: Training Manual 2nd ed. Denver: Denver Developmental Material, Inc; 1992.
12. Kemendikbud RI. Number of Data of Early Childhood Education Unit (School) by Province Based on All Forms of Education (Jumlah Data Satuan Pendidikan (Sekolah) Anak Usia Dini per Provinsi Berdasarkan Seluruh Bentuk Pendidikan) [Internet]. Kementerian Pendidikan dan Kebudayaan Republik Indonesia. 2016. [cited 2016 Sep 14]. Available from: <http://referensi.data.kemdikbud.go.id/index21.php>
13. Kemendikbud RI. Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 137 of 2014 on the National Standard for Early Childhood Education (Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 137 tahun 2014 tentang Standar Nasional Pendidikan Anak Usia Dini). Jakarta: Kementerian Pendidikan dan Kebudayaan Republik Indonesia; 2014.
14. Feller A, Grindal T, Miratrix L. Compared to What? Variation in The Impacts of Early Childhood Education by Alternative Care Type. *Ann Appl Stat*. 2016;10(3):1245-85.
15. Snow K. Variation in Children's Experience of Kindergarten and The Common Core. [Internet]. National Association for the Education of Young Children. 2012. [cited 2016 Sep 14]. Available from: https://www.naeyc.org/files/naeyc/CommonCore_KVariation.pdf
16. Hoff E, Core C. Input and Language Development in Bilingual Children. *Semin Speech Lang*. 2013;34(4):215-26.
17. Nicolandis E, Charbonnier M, Popescu A. Second Language/Bilingualism at an Early Age with Emphasis on Its Impact on Early Socio-cognitive and Socio-emotional Development [Internet]. *Child Encyclopedia*. 2016. Available from: <http://www.child-encyclopedia.com/sites/default/files/textes-experts/en/614/second-languagebilingualism-at-an-early-age-with-emphasis-on-its-impact-on-early-socio-cognitive-and-socio-emotional-development.pdf>.
18. Keys TD, Farkas G, Burchinal M. Preschool Center Quality and School Readiness: Quality Effects and Variation by Demographic and Child Characteristics. *Child Dev*. 2013;84(4):1171-90.