DOI Number: 10.37506/v11/i1/2020/ijphrd/194069

Socio-demographic Characteristics and Caregiver's Quality of Life Associated with Suspected Developmental Delay among Early Childhood in Northeast of Thailand

Supattra Boonjeam[1], Rajda Chaichit[2], Benja Muktabhant[3], Suwit Udompanich[4]

[1]Student of Doctoral Program of Public Health, Faculty of Public Health, Khon Kaen University, [2]Department of Preventive Dentistry, Faculty of Dentistry, Khon Kaen University, [3]Deparment of Health Administration, Health Promotion, and Nutrition, Faculty of Public Health, Khon Kaen University, [4]Faculty of dentistry, Phayao University, Thailand

Abstract

The first 5 years was possibly the most critical and extremely important in child development. Development problem of Thai children are not improve to standard.

This research aimed to analyze about association between Socio-demographic Characteristics, Caregiver's quality of life and suspected developmental delay among early childhood. A Cross-sectional analytical study, there are 1,168 sampling groups; caregivers 584 persons, early childhood 584 persons, between April to May 2019. The multivariable analysis was used by multiple logistic regression.

Early childhood aged average 36.1 months, males are 53.1%, and with suspected developmental delay 48.1% . There are 4 factors which are associated with the suspected developmental delay; 1) monthly self-income of caregiver (AOR = 1.9; 95% CI: 1.24 to 2.87; p = 0.003) 2) gander (AOR = 1.9; 95% CI: 1.33 to 2.64; p<0.001) 3) age range (AOR = 2.5; 95% CI: 1.54 to 4.09; p<0.001) and 4) quality of life about social relationship (AOR = 1.6; 95% CI: 1.23 to 2.01; p = 0.020).

Prevalence of suspected developmental delay is quite high, Socio-demographic Characteristics and caregiver's quality of life has influenced to the early childhood development.

Keywords*: Early childhood, Developmental, Quality of life.*

Introduction

Children are important resource in society; therefore, the children should have efficient development so that they can grow up to be good children learn qualities that will help them become happy, and be able to create and do anything benefit to our society in the future. The children are significant to our county which we should invest them to get high number of returns around 6.7-17.6 times[1].

Corresponding Author:
Rajda Chaichit
Department of Preventive Dentistry, Faculty of Dentistry, Khon Kaen University, Thailand

In the first five years of life, it's the most important time at any other time in their lives; their developments will go faster including their brain develop more and faster around 80% comparing to adults. Besides, it's also related to the foundation for children developments and their quality of life. Window of opportunity points us that if we evaluate or notice their delayed development in early before age of 6 years, that can stimulate their development and help them to be their normal developments[2].

A report from World Health Organization found out that the children all around the world 15-20%, their development are not appropriate[3]. In addition, department of health, ministry of public health 2017 has observed that children normal developments for

early children in Thailand are in their rate at 70%, the children in Northeast of Thailand is at only 50-60% [4]. Regarding to family structure, some parents move out from rural area to city and leave their children to stay with grandparents, this situation has occurred so much in Northeast region, the children do not live with their own parents are 30%[5], so family structure are members of grandparents and grandchildren which without parents.

After literature review, there are risk factors which effect to the children developments involve with biological and economic and social. Regarding to biological risk factor composes of health and mothers' nutrition status, complication during intra partum and postpartum periods including health and nutrition status of the children[6]. Relating to economic and social factors compose of age, occupation of mothers, including family income and the way how they raise the children, especially mothers' education level is quite so much affect to the children than fathers[7,8]. In the past, there are many studies related to risk factors which effects to the early children developments which still be problem. A part of this issue might cause of biological and economical and social risk factors. However, there is not any study about socio-demographic characteristics, caregiver's quality of life and early children developments in Northeast of Thailand.

Therefore, this study aimed to analyze about association between socio-demographic characteristics, caregiver's quality of life and suspected developmental delay among early childhood in Northeast of Thailand.

Material and Method

Study Design and Sampling: A cross-sectional analytical study and collect data from April through May 2019. The sample size was calculated following formula to specify sampling size by multiple logistic regression, Hsieh FY [9]. ρ of 0.70, VIF= 3.33. The sampling size of this study is 584 persons.

Using Multi Stages random sampling did in research for 20 provinces in Northeast region. Simple random sampling is used for 5 provinces at 25% out of all provinces in this region, next, for selected 2 districts out of each sampling province. Then, do random sampling group from name list of the early children (0-6 years) from public health department of sampling district (HosxP PCU program), according to proportional to size for 10 districts, get sampling group 58-60 persons each.

Inclusion criteria are Thai nationality children aged 0-6 years and been live in Northeast of Thailand. The caregivers are look after children at least 6 months up, their profiles can be given us completely and they must have the maternal and child health handbook. Regarding to exclusion criteria are disable children from birth which effect to their developments such as down syndromes, autism, cerebral palsy and children with seizure history, children with no cooperative to check development, children with no any age history and children who are not raised by their own blood relatives.

Material: Socio-demographic Characteristics which compose of age, gender, occupation, education level, self-income, family income, income sufficiency, number of children per family and living with their own parents.

Evaluation of Caregiver's quality of life by WHOQOL-BREF[10]: there are 4 domains; physical, psychological, social relationship and Environmental. Divide quality of life in each domain and overall for 3 levels which are poor, medium and good.

Suspected developmental delay test by Denver II is used to screen children's development. Four domains (gross motor, fine motor adaptive, language and personal-social). It consists of 125 items, testing time is around 10-20 minutes. The testing results are divided into 2 levels; Normal, develop a child without a delayed test and no more than one caution tests. Suspected has a test two or more cautions and one or more than one delay tests. This study uses Denver II in Thai[11] to do developmental tests. In addition, assessor has been passed children development training from the National Institute for Child and Family Mahidol University.

Data Analysis: Relating to analysis of association between socio-demographic characteristics, caregiver's quality of life and suspected developmental delay, a simple logistic regression, was used for bivariate analysis to identify individual factors associated with suspected developmental delay. The factors that had p-value <0.25 were processed into the multivariable analysis using multiple logistic regression by backward elimination method which statistical significance is (p-value= 0.05), reported the adjusted odds ratio (AOR), 95% confidence interval (95% CI) and using Stata version 13.1 program (Stata Corp, College Station, TX)

Result

Socio-demographic Characteristics: The total 1,168 sampling; 584 caregivers and 584 childhood found most of caregivers are female 93.3%, average age is 40.4 years with a range of 16-74, their occupation is agriculturist 44.4%. Education level is primary school 46.4%, average monthly self-income 6,394.8 THB, average monthly family income 15,029.8 THB. Early childhood are males 53.1%; average age is 36.1 months with a range of 9-72 months, the children aged 36-76 months is 46.7%. The child living with their own parents is 51.4%. (Table 1)

Table 1: Socio-demographic characteristic

Factors	Number	(%)
1. Caregiver's age (Years)		
16-29	165	28.2
30-59	359	61.5
60-74	60	10.3
Mean: SD	40.4	13.8
Median (Min: Max)	39.0	16: 74
2. Occupation		
housewife	147	25.2
agriculturist	259	44.4
governmental officer	120	20.5
businessman, trader	58	9.9
3. Education level		
primary school	271	46.4
high school/vocational	213	36.5
bachelor's degree up	100	17.1
4. Monthly self-income (THB)		
< 10,000 (325 US dollars)	455	77.9
> 10,000	129	22.1
Mean: SD	6,394.8	7,922.9
Median (Min: Max)	4,000.0	0: 70,000
5. Monthly family income (THB)		
< 10,000	244	41.8
> 10,000	340	58.2
Mean: SD	15,029.8	15,706.5
Median (Min: Max)	10,000.0	1,000: 200,000
6. Income's sufficiency		
sufficient	299	51.2
insufficient	285	48.8
7. Gender of child		
male	310	53.1
female	274	46.9
8. Age range (months)		
0-12	105	18.0
13-35	206	35.3
36-72	273	46.7
Mean: SD	36.1	15.7
Median (Min: Max)	36	9:72
9. Number of children per family		
1	276	47.3
2	257	44.0
3-5	51	8.7
10. living with parent		
living with parents	300	51.4
not living with parents	284	48.6

Caregivers' quality of life: It found average score of their quality of life in good level 77.7%. When consider in each domain, their psychological domain is in good level 75.7%, next on down environmental domain is 71.7%, social relationship is 68.5% and physical is 66.3%. (Table 2)

Table 2: Caregiver's quality of life

Factors	Number	(%)
Quality of life in overall		
medium	130	22.3
good	454	77.7
Mean: SD	104.9	13.0
Median (Min: Max)	104.0	71: 130
Quality of life in each domain		
Physical		
medium	197	33.7
good	387	66.3
Psychological		
poor	2	0.3
medium	140	24.0
good	442	75.7
Social relationships		
poor	6	1.0
medium	178	30.5
good	400	68.5
Environmental		
poor	1	0.2
medium	164	28.1
good	419	71.7

Children development: The early childhood development in Northeast of Thailand found they are in suspected developmental delay 48.1%. If consider each domain development, language domain tends to be delayed the most 39.4%, next, it's fine motor adaptive 27.2%. (Table 3).

Table 3: Denver II Results

Denver II	Number	%
Normal	303	51.9
Suspect	281	48.1
Gross motor	79	13.5
Language	230	39.4
Fine motor adaptive	159	27.2
Personal-social	74	12.7

Factors associated with suspected developmental delay: Bivariate analysis: Bivariate analysis on the association between each independent variable and suspected developmental delay in early childhood was performed presenting the crude odds ratio (OR) with 95% CI, and p-value. All factors that had p-value <0.25 were proceeded to multivariable analysis by using multiple logistic regression. (Table 4).

Table 4: Factors associated with suspected developmental delay: Bivariate analysis

Factors	Number	% of Event	Crude OR	95%CI	P -value
1. Monthly self-income (THB)					**0.003**
> 10,000	129	36.4	1		
< 10,000	455	48.1	1.8	1.23-2.76	
2. Gender of child					**<0.001**
Female	274	39.8	1		
Male	310	55.5	1.9	1.36-2.62	
3. Age range (months)					**<0.001**
0-12	105	31.4	1		
13-35	206	46.6	1.9	1.16-3.12	
36-72	273	55.7	2.7	1.70-4.41	
4. Living with parent					**0.011**
Living with parents	300	43.0	1		
Not living with parents	284	53.5	1.5	1.10-2.12	
5. Quality of life in physical domain					**0.049**
Good	387	45.2	1		
Medium	197	53.8	1.4	1.00-1.99	
6. Quality of life in social relationship domain					**0.016**
Good	400	44.7	1		
Medium and poor	184	55.4	1.5	1.18-2.18	

Factors associated with suspected developmental delay: Multiple logistic regression: Multiple logistic regression analysis by Backward elimination indicated that The children who are raised by the caregiver who has monthly self-income lesser than 10,000 THB, tend to be suspected developmental delay more than the ones who are taken cared by the caregiver with monthly self-income over than 10,000 THB for 1.9 times. (AOR= 1.9; 95% CI: 1.24 to 2.87). Boys tends to be suspected developmental delay more than girls for 1.9 times (AOR= 1.9; 95% CI: 1.33 to 2.64)

The child aged 13-35 months has a chance to suspected developmental delay more than the ones aged 0-12 months in double fold. (AOR= 2.0; 95% CI: 1.21 to 3.34). In addition to the children aged 36-72 months tends to be suspected developmental delay more than the children aged 0-12 months in 2.5 times (AOR= 2.5; 95% CI: 1.54 to 4.09).

The children who are raised by the caregiver with social relationship in medium and poor level, it has chance to reflect the children be suspected developmental delay more than the ones who are in good level for 1.6 times. (AOR= 1.6; 95% CI: 1.23 to 2.01). (Table 5).

Table 5: Factors associated with suspected developmental delay: Multivariate analysis

Factors	Number	% of event	Crude OR	Adjusted OR	95% CI	P -value
1. Monthly Self-income						**0.003**
> 10,000	129	36.4	1	1		
< 10,000	455	48.1	1.8	1.9	1.24-2.87	
2. Gender						**<0.001**
Female	274	39.8	1	1		
Male	310	55.5	1.9	1.9	1.33-2.64	
3. Age Range						**<0.001**
0-12	105	31.4	1	1		
13-35	206	46.6	1.9	2.0	1.21-3.34	
36-72	273	55.7	2.7	2.5	1.54-4.09	
4. Quality of Life in Social Relationship						**0.020**
Good	400	44.7	1	1		
Medium and poor	184	55.4	1.5	1.6	1.23-2.01	

Discussion

This study revealed that the suspected developmental delay among early childhood in Northeast of Thailand were 48.1% . The associated factors with suspected developmental delay were found 4 factors including: monthly self-income, gender, age range and quality of life in social relationship domain.

The association between Monthly self-income of caregivers and suspected developmental delay was consistent with Ozkan et.al[12], they found that economic and social factor effected to the delayed development.

Girls who are in normal development greater than boys were concordant with a study of Bhattacharya and Brito et al[13,14]. They found that boys were suspected developmental delay greater than girls. Nevertheless, it was different from a study of Ozkan et.al[12] reported that there was not difference on gender with suspected developmental delay.

Age range of the early childhood with developmental delay the most was 35-72 months which this result was consistent with problem about developmental delay on language domain which tended to increase up. A part of problem is environmental circumstance was not propitious to support the children development; for example, eating food following advertisement, leaving kids to use electric media alone, so the kid aged 3-5 years were slightly risky greater than the kid aged 0-2 years which were consistent with a study of Brito et al. and Celikkiran et al[14,15]., they found that infant stage had normal developmental better than preschool age.

Regarding to the caregiver's quality of life in social relationship is related to children development which also conformed to a study of Yamada et al[16]., especially mother who was in poor quality of life which her might get lower social support, it also affected to another family members on development, personality and children behavior.

Conclusion

The risky factors affected to the children development issue, biological factor slightly was lowering significant, but the socio-demographic characteristics factor was more important. Therefore, we should closely pay more attention to the risk factors which were biological, social and environmental factors which cause of children development issues. As a result, we should monitor these risk factors which might affect to the children in first five year in order to solve the problem and did any activities to stimulate and do support their normal developmental and being main human resource to develop our country in the future.

Research Ethics approval for this study was obtained from the Khon Kaen University Ethics Committee for human Research (HE622051).

Conflict of Interest Statement: The authors declare that no conflict of interest.

Source of Funding: The Research and Training

Center for Enhancing Quality of Life of Working Age People, Khon Kaen University Thailand.

References

1. Walker SP, Wachs TD, Grantham-McGregor S, Black MM, Nelson CA, Huffman SL, et al. Inequality in early childhood: risk and protective factors for early child development. Elsevier Ltd all Rights Reserved 2011; 378(9799): 1325-1338.
2. Kachapakdee N. Child development. Developmental textbooks and child behavior for general practice. Bangkok: Beach Enterprise Co Ltd; 2009.
3. World Health Organization. Developmental Difficulties in Early Childhood: Prevention, early identification, assessment and intervention in low and middle-income countries: A Review. Child and Adolescent Health and Development. Turkey: Turkey Country Office and CEECIS Regional Office; 2012.
4. Department of Health, Ministry of Public Health. Development of the situation survey and early child rearing behavior of Thai families in 2017. Bureau of Health Promotion, Ministry of Public Health; 2017.
5. National Statistical Organization. Thailand multiple Indicator cluster survey. In Bangkok: National Statistical Organization and UNICEF; 2012.
6. Meungrungsarat T, Fuengfu A. Factors affecting child development. Developmental textbooks and child behavior book 4. Bangkok: PA Living Limited; 2018. p. 44.
7. Dubow EF, Boxer F, Huesmann LR. Long-term effects of parent' Education on children's educational and Occupational Success: Mediation by Family Interaction, Child Aggress, and Teenage Aspiration. Merrill-Palmer Q 2009; 55(3):224-49.
8. Bradley RH, Corwyn RF. Socioeconomic Status and Child Development. Annu Rev Psychol 2002; 53:371-99.
9. Hsieh FY, Bloch DA, Larsen MD. A simple method of sample size calculation for linear and logistic regression. Stat Med 1998; 17:1623-34.
10. Mahatnirunkul S, Tuntipivatanaskul W, Pumpisanchai W, et al. Comparison of the WHOQOL100 and the WHOQOL-BREF (26 items). J Ment Health Thai 1998; 5: 4-15.
11. Kachapakdee N, Lertwadadrakul O. Training manual the Denver Developmental Screening Test II. 4thed. Nakhon Pathom: National Institute for Child and Family Development, Mahidol University; 2013.
12. Ozkan M, Senel S, Arslan EA, Karacan CD. The socioeconomic and biological risk factors for developmental delay in early childhood. Eur J Pediatrics 2012; 171(12): 1815-21.
13. Bhattacharya T, Ray S, Das DK. Developmental delay among children below two years of age: a cross-sectional study in a community development block of Burdwan district, West Bengal. Int J Community Med Public Health 2017; 4:1762-7.
14. Brito CM, Vieira GO, Costa MC, Oliveira NF. Neuropsychomotor development: the Denver scale for screening cognitive and neuromotor delays in preschoolers. Cad Saude Publica 2011; 27(7):1403-14.
15. Celikkiran S, Bozkurt H, Coskun M. Denver Developmental Test Findings and their Relationship with Sociodemographic Variables in a Large Community Sample of 0–4-Year-Old Children. Arch Neuropsychiatr 2015; 52: 180-4.
16. Yamada A, Kato M, Suzuki M, Watanabe N, Akechi T, Furukawa TA. Quality of life of parents raising children with pervasive developmental disorders. BMC Psychiatry 2012;12: 119.