

## The Relationship Between Maternal Education, Family Income, Parenting Style, and Language Development in Children Aged 3-4 Years in Boyolali, Central Java

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### ABSTRACT

**Background:** Early childhood is a unique period where development process such as language development occurs rapidly. Speech and language disorders are two among the most common problems in children. The first years of life form critical period in children's life. Maximum brain plasticity occurs during the initial years of life and continues to develop for a few years with slower pace. Sensorik experience, stimulation, and language exposure during this period determine the synaptogenesis, myelination, and synaptic relation. National Center for Health Statistics (NCHS) reported that speech disorder occurred approximately 0.9% in children under five, and 1.94% in children aged 5-14 years old. The purpose of this study was to determine the relationship between maternal education, family income, parenting style, and language development in children aged 3-4 years.

**Subjects and Method:** This was an analytic observational study with cross sectional design. This study was conducted at Kindergarten Nogosari Sub-District, Boyolali, Central Java. A sample of children aged 3-4 years old were selected for this study. The dependent variable was language development. The independent variables were maternal education, family income, and parenting style. The data were analyzed by multiple logistic regression.

**Results:** Maternal education  $\geq$  senior high school (OR= 25.74; 95% CI= 1.80 to 367.62; p= 0.017), family income  $\geq$  minimum regional wage (OR= 32.98; 95% CI= 2.93 to 370.52; p= 0.005), and democratic parenting style (OR= 20.19; 95% CI= 1.83 to 222.82; p= 0.014), had positive and statistically significant relationships with language development in children aged 3-4 years old.

**Conclusion:** Maternal education  $\geq$  senior high school, family income  $\geq$  minimum regional wage, and democratic parenting style, have positive and statistically significant relationships with language development in children aged 3-4 years old.

**Keywords:** maternal education, family income, parenting style, child language development

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### BACKGROUND

Language is a means of communication acquired by human since birth. Newborn babies do not yet to have speech development. Language development of children starts since the day they was born up to 5 years old, especially acquire thousands of vocabulary, phonology and grammar system as well as the similar complex regulation to use their language naturally within vari-

ous social background. During early childhood, children never learn any language, moreover learning vocabulary in particular. Babies acquire language since the first few months, long before they utter they first word. There are some indication of baby can respond to sounds (Child direct speech). It is often called as maternal and paternal language that is characterized by unique intonation and rhythm (Putri et al., 2014).

Speech and language disorder is one of common problems in children. According to National Center for Health Statistics (NCHS), based on parents reports (regardless of hearing disorder and cleft palate) number of speech disorder cases are 0.9% on children under 5 years old, and 1.94% on children of 5-14 years old. The result of direct evaluation toward school children showed that the incidents are 3.8 higher compared to the result of interview. Speech and language disorder on children are estimated 4-5% (Gunawan et al., 2011).

Communication disorder basically is a deviation of one's language aspect development. It happens as the result of the occurrence of disease, physical, psychological as well as sociological impairment. The impairment may occur during fetal stage of the pregnancy, during childbirth or after birth. In addition to those reasons are genetic factor, congenital or acquired defect (Muryanti et al., 2013)

The first three years is a critical period in a child's life. The maximum plasticity of brain occurs in the first few years of life and continues in slower speed. Sensory experience, stimulation and language exposure during this period decide synaptogenesis, myelination, and synaptic relation. The principle of "use or lose" is based on brain plasticity principle (Mundkur, 2005).

Therefore if language disorder is not treated correctly, then disorder on reading development, verbal development, behavior, psychosocial, and academic development will occur. Children who experience language disorder during their pre school 40% up to 60 % will endure learning problem in written language and academic lesson (Hartanto et al., 2011).

A child is considered having expressive language disorder if there is discrepancy between what is understood (receptive language) with what they would like to convey

(expressive language). For example when a child is asked by her/his mother to go to the bath room, to retrieve a hair bow which is left and put it back in its place in her room, the child will do it with ease. However when her mother asks her to tell what she had done, she will only say briefly "retrieve the hair bow" (Hildayani, 2006).

Maternal education contributes in children development since good knowledge and education bring up positive attitude for mothers so that mothers are able to give stimulation in improving language development on preschool aged children (Hidayat, 2005).

Children with history of weak social economy are likely to have higher incidents of language disorder compared to children with middle to upper social economy history. Sixty percent of them are identified to have language and speech disorder (30% are speech delay, 15% are speech and language delay and 15% are language delay). Cochrane study reports data of language delay in pre school age with prevalence 2.3-19%. It shows that most of studies reported prevalence that ranges from 40% up to 60% (Setyowati, 2012).

Sufficient family income will support children growth and development. Since parents are able to provide all children's needs, both primary and secondary one, which may stimulate the growth and development of the children well. It can be estimated that the delay in children's language development happen because of lack of learning. Because of insufficient parental income parents give less attention to their children language development (Soetjining-sih, 2012).

Parenting is closely related to the development of a family/ household and community in terms of giving attention, time and support to fulfill children's physical, mental, and social needs, who in their pe-

riod of growth and also for other family members. Every family, in conducting the parenting process surely aims to optimize holistic growth and development. Family, school, community, and society are responsible to provide safe and healthy environments for children to live their life at its best and develop optimally. Children, parents, and community play important roles in a parenting process and each role is influenced by another's role (Latifah et al., 2009).

## SUBJECTS AND METHOD

This study was analytic observational study with cross sectional design. Sample of the study was children of 3-4 years old in Nogosari Sub-District, Boyolali Regency. There were 60 subjects of study. Data collection instruments were questionnaires and library study. Data analysis used logistic regression.

## RESULTS

The result of research subject characteristics can be seen below in Table 1.

**Table 1. Continuous data of characteristics of research subjects**

Variabel	n	Mean	SD	Min	Max
Fathers' age	60	31.92	4.66	24.00	44.00
Mothers' age	60	28.40	4.08	21.00	36.00
Parenting style	60	118.43	9.01	98.00	138.00
Language development	60	20.40	1.29	16.00	22.00

**Table 2. Categorical data of research subjects characteristics based on education, occupations, and income**

Variable	n	%
<b>Maternal Education</b>		
Low (< Senior High School)	29	48.3
High (≥ Senior High School)	31	51.7
<b>Fathers' Occupations</b>		
Self employed	31	51.7
Private employees	27	45.0
Civil Servants	2	3.3
<b>Mothers' Occupations</b>		
Self employed	7	8.3
Private employees	17	11.7
House wives	36	60.0
<b>Fathers' income</b>		
Low	19	31.7
High	41	68.3

**Table 3. Chi square test on maternal level of education with children's language education**

Education	Language Development				Total		OR	p
	Less		Good		n	%		
	n	%	n	%				
Low	9	15.0	20	33.3	29	100	6.53	0.016
High	2	3.3	29	48.4	31	100		
Total	11	18.3	49	81.7	60	100		

Table 2 shows the result of research subjects' characteristics that majority of mothers possess high education ( $\geq$  SMA) (51.7%) with fathers' occupations are self employed (51.7%), mother's occupations are housewives (60.0%), fathers' income is categorized as high (68.3%).

Table 3 Shows that there is a relation between level of education with children's

language development and statistically significant ( $p=0.016$ ) with Odd Ratio value is 6.53 means that parents with high level of education are likely to have 6.53 times higher possibility to make their children having better language development compared to children whose parents' level of education are low.

**Table 4. Chi square test on the relation of parents' income with children's language development**

Income	Language Development				Total		OR	p
	Less		Good		n	%		
	n	%	n	%				
Low	9	15.0	10	16.7	19	100		
High	2	3.3	39	65.0	41	100	17.6	< 0.001
Total	11	18.3	49	81.7	60	100		

Table 4 shows that there is a relation between income with language development and statistically significant ( $p<0.001$ ) with Odds Ratio value as much as 17.6 means that parents with high income are

likely to have 17.6 times higher possibility to make children having better language development compared to children whose parents' income is low.

**Table 5. Chi square test on the relation of parenting style with children's language development**

Parenting style	Language Development				Total		OR	p
	Less		Good		n	%		
	n	%	n	%				
Less	8	13.3	11	18.4	19	100		
Good	3	5.0	38	63.3	41	100	9.21	0.003
Total	11	18.3	49	81.7	60	100		

**Table 6. Double logistic regression analysis**

Variables	OR	95% CI		p
		Lower	Upper	
Mothers' education level $\geq$ Senior High School	25.7	1.8	367.6	0.017
Income $\geq$ Regional Minimum Wages	33.0	2.9	370.5	0.005
Democratic parenting compared to non democratic	20.2	1.8	222.8	0.014
N observation	60			
-2 log likelihood	26.38			
Nagelkerke R <sup>2</sup>	65.3%			

Table 5 shows there is a relation between parenting style with language deve-

lopment and statistically significant ( $p=0.003$ ) with Odds Ratio value is 9.21 means

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that children who are raised using good parenting are likely to have 9.21 times



higher possibility to have better language development compared to children who are raised using less good parenting type.

Odd Ratio Value of education variable is 25.75, it means that mothers with higher education have 25.75 times bigger possibility for their children to have better language development compared to mothers with lower education. The result of Wald test shows the existence of relationship between education with children's language development and it is statistically significant (OR= 25.75; 95% CI=1.80 to 367.63; p= 0.017).

Odd Ratio value of income variable is 32.98 it means that families with higher income have 32.98 times bigger possibility to have children with better language development compared to those with lower income. The result of Wald test shows the existence of relationship between income and children's language development and it is statistically significant (OR= 32.98; 95% CI= 2.94 to 370.53; p= 0.005).

Odd Ratio value of parent types variable is 20.19, it means that parents with good parenting types have 20.19 times bigger possibility to have children with better language development compared to those with less good parenting types. The result of Wald test shows the existence of relationship between parenting types and children language development and it is statistically significant (OR= 20.19; 95% CI= 1.83 to 222.82; p= 0.014).

The value of Nagelkerke R<sup>2</sup> is 65.3%, it means that the three independent variables (education, income, and parenting types) are able to explain children's language development as much as 65.3% and the rest which is 34.7% is explained by other factors the research model.

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## DISCUSSION

### 1. Relationship between Maternal level of Education with Children's Language Development

The research result shows that there was a relationship between education and language development and statistically significant with (p=0.017), in which the higher parents' level of education was the better children's language development would be. The result was supported by the study conducted by Rowe (2008) that language development of a child is related with social economy status which is measured by education. Education is any efforts taken by adult (parents) in their relationship with children to lead their physical and psychological development into adulthood (Djamarah, 2012).

Education plays important role in the society. By having sufficient education someone will understand which one is good and able to make them beneficial for themselves as well as for others who need them. Educated parents usually have very high aspiration and expectation toward their children. Parents will give direct support such as helping children with their homework so that they can achieve better than children whose parents' level of education are low (Eryanto dan Rika, 2013).

Dalyono (2005) stated that parents give a great deal of influence toward children's achievement in their study. Parents' level of education, the amount of income, the intensity of parental attention and guidance, parental concordance, relationship between parents and children, home peacefulness, all of them influence the study achievement.

It is in accordance with the study conducted by Apriastuti (2013) that there is a significant a significant relationship between education and children development. Parental education in nurturing children will

affect how they conduct parenting. There are some ways to be more prepared in conducting parenting role among others are: actively include children's education, observe anything that is oriented to children issue, always try to spend time for children and evaluate the development of family function and children's trust.

## **2. Relationship between Parents' Income and Language Development**

The result of research shows that there was a relationship between income and language development significantly with ( $p=0.005$ ), in which the higher income was then the better children's language development will be. The result supports the study from Rowe (2008) that children's language development is related to social economy status that is measured by income. Parents' level of income is related to parental development to fulfill the needs, selecting types and amount of food, and also the effect toward family life style which also affect children (Octari et al., 2014).

Income will affect someone's social status, in particular in materialist and traditional society that value high social economy status toward wealth. Some studies about relationship between language development and family's social economy status show that children from poor family experience delay in language development compared to children who come from better social economy condition. It happen probably because of the difference in intelligence and learning opportunity (humble family is estimated give less attention to children language development) or in the opposite, usually it happens to children who came from better economy condition since parents concern more on job and money instead of taking care their children.

For example: parents in moderate circumstance are likely to put their children in day care. In the other side, if parents in

more humble situation give more attention to their children, then their children will show better academic achievement than children from moderate family. Since children firstly learn from their parents and their bond will be created faster.

## **3. Relationship between Parenting Types and Language Development**

Research result shows that there was a relationship between parenting types with language development and statistically significant ( $p<0.014$ ), in which the better parenting types applied by parents to their children the better children's language development will be. The result supported a study by Apriastuti (2013). There was a significant relationship between parenting types with children development and there was a significant relationship between parenting types and children development if being controlled by education.

Mensah et al (2013) stated that the result of research shows that parenting style give influence on to students' social development. Parenting style is an important factors in shaping character, personality, emotional intelligence, self concept formation, and internalization of values for children to be able to adjust themselves with their surrounding environment so that children are able to be self-dependent, grow and develop healthily and optimally. Parenting style plays an important role since family is the first communication where children endure education and their personal characters are shaped, parents who are able to give good example will give good impact also, and so the opposite.

Latifah et al (2009) stated that every family in doing parenting process surely aims to optimize growth and development holistically. Parents have their own way and pattern in nurturing and guiding their children. The way and pattern are surely distinguished between one family to others.



Parenting style is a representative of parents' and children's attitude and behavior in interacting and communicating during nurturing activity. In the nurturing activity, parents will give attention, regulation, discipline, reward and punishment, as well as responds toward their children's wish. Parents' attitude, behavior, and habit are always observed, evaluated, and copied by their children and later, consciously or unconsciously, will be internalized and afterward also become their children's habit. It will affect their children development (Murtiyanti, 2011).

The conclusion of the research is there was positive relation that was statistically significant between level of education with language development on children (OR= 25.7; 95% CI= 1.8 to 367.6; p= 0.017). There was a positive relationship that was statistically significant between the level of income with language development on children (OR= 33.0; 95% CI= 2.9 to 370.5; p= 0.005). There was a positive relationship that was statistically significant between parent style with language development on children (OR= 20.2; 95% CI= 1.8 to 222.8; p= 0.014). The result of data analysis on the relationship between level of education, level of income, and parenting style with language development on children was that all independent variables simultaneously had positive and significant influence with  $p < 0.050$ . All independent variables simultaneously in linear regression model were able to describe and predict the improvement of language development on children as much as 65.3 % (Nagelkerke  $R^2 = 65.3\%$ ).

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