

THE IMPORTANCE OF PARENTING ON GROWTH AND DEVELOPMENT IN TODDLERS

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ABSTRACT

We studied the influence of parenting on growth and development in toddlers. We used a cross sectional design and the subjects were randomly selected from those hospitalized in Child Health Department of Dr. Soetomo hospital Surabaya from November 1st 2006 to December 31st 2006 using questionnaires and direct observation during the interview. A significant result association between toddler growth (nutritional status) with caregiver and Kartu Menuju Sehat (KMS) was found. There was no significant relationship between toddler growth (nutritional status) with breastfeeding and pos pelayanan terpadu (POSYANDU). Toddler development using Denver Developmental Screening Test II (DDST II) was significantly associated with breastfeeding and not significantly related to KMS, caregiver and POSYANDU. This study shows that toddlers growth was influenced by caregiver and KMS, while the toddler development was influenced by breastfeeding.

Keywords: parenting, growth, development, toddlers, DDST II

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INTRODUCTION

Toddler is a sensitive period for deviation of growth and development, in this period basic personality is built up. The first three years of a child's life are increasingly recognized as an important time for brain growth and a window of opportunity to optimize children's development in many ways. Many factors influence child's growth and development such as heredity, nutrition, illness and disease, physical, emotional and social environment, age and gender, birth process and others. Family as close environment factor strongly influences child's growth and development (Soetjningsih 1995, Regalado 2001, Tanuwijaya 2002). The timing and the attainment of developmental milestones are important markers of neurologic integrity, and the identification of developmental delay may be important for the prevention of consequent problems, such as abnormal behaviors and long-term disability.

Child's basic needs for growth are generally classified into 3 basic needs. They are biomedical physical needs (*Asuh*), love (*Asih*) and mental stimulation (*Asah*) (Soetjningsih 1995, Tanuwijaya 2002). A previous study (Pudji 2001) found that there were no significant differences of development status perception according

to child's age, mother's education, mother's job, and number of sibling.

Parenting is a complex mixture of culture and biology. The way we raise our children strongly influences their later childhood and adult behavior. Some people feel they have an intuitive/inborn sense of parenting with "gut" impulses in response to infant behaviors. Most feel they consciously or unconsciously adapted parenting styles and techniques from their own parents or extended family (Wight 2001). This study aimed to know the influence of parenting on growth and development in toddlers.

MATERIALS AND METHODS

This cross sectional study was done in 280 toddlers. Subjects were randomly selected from those hospitalized in Child Health Department of Dr. Soetomo hospital Surabaya from November 1st 2006 to December 31st 2006. We included toddlers 3 to 36 months old age and their parents who agreed to participate, by excluding children with central nervous system infections, major congenital malformation such as hydrocephalus, congenital hypothyroidism, or physical impairment. Data were collected by interviewing parents using a prepared questionnaire and

direct observation. The questions included age, sex, breastfeeding, caregivers, having *kartu menuju sehat* (KMS) and attending *pos pelayanan terpadu* (POSYANDU). We used Denver II test to each child to identify development deviation or normal before toddler discharged from hospital and stable condition. The interpretation of Denver Developmental Screening Test II (DDST II) was as follows: normal (no delay and a maximum of 1 caution and suspect (one delay and/or more than one caution). The second test was done in one – two weeks to impress of moment factor (Frankenburg 1992). Determination of nutritional status in anthropometry by actual weight percentage of ideal body weight according to height during the examination (CDC growth charts 2000) was classified (Waterlow) into 4 types as follows: obesity ($\geq 120\%$), overweight (110-120%), normal (≥ 90 -110%), mild malnutrition (70-90%) and severe malnutrition ($\leq 70\%$) (Soetjiningsih 1995). Statistical analysis was using Chi-square test with 95% confidence interval.

RESULT

The total number of subjects was 280 toddlers, consisting of 151 boys and 129 girls, with the age range from 3 to 36 months (Table 1).

Table 1. Distribution of subjects by age groups and sex

Age Groups (Months)	Sex		Total
	Boys	Girls	
3 - 12	75	70	145
13 - 24	53	40	93
25 - 36	23	19	42
Total	151	129	280

There were abnormalities of toddlers growth in caregiver factor, having KMS, breastfeeding and attending POSYANDU. We found suspect of delay in toddlers development based on Denver II, whose result can be seen in Table 2

DISCUSSION

Growth includes the nature of **two** different events but related to the growth and development. Growth is associated with major problems or changes in size at the individual level that can be measured by weight (grams, pounds, kilograms), length (centimeters, meters) and bone age. Development is the increased ability of the structure and function of a more complex body in a regular pattern as a result of the maturation process. This includes the development of emotional, intellectual

and behavior as a result of interaction with the environment. It can be concluded that growth has an impact on the physical aspects, whereas the development of functions is related to the maturation of the individual. The second incident occurred in a single file on an individual. Important period in the development of the child is a toddler. Because at this time, growth and development are happening very fast and will determine child development in the future (Soetjiningsih 1995, Tanuwijaya 2002). Caregivers, having KMS, breastfeeding and attending POSYANDU are factors that affect toddler growth and development.

Caregiver is very influential on toddler's growth and development. Because caregivers play a role in providing nutrition in toddler, maintaining children's environmental hygiene and sanitation and playing a role in providing educational guidance, stimulation and affection. So that the caregiver is very influential, not only in physical, but also mental and social developments in children (Source 1999). Mother is the best caregiver for the child because breast milk is the best nutrition for a baby and give love to baby at the same time (Freed 1995, Victoria 1998). In this study, caregivers were grouped into mothers and other mothers. There was no significant relationship between the caregiver with growth ($p = 0.809$) and development ($p = 0.552$). This was because not all mothers caring for children would also breastfeed their children and there were mothers who did not give adequate stimulations to the children. Therefore it is important to brief the mothers to provide breastfeeding to children and training on child stimulation.

Table 2. Association Toddler growth and development and caregiver, having KMS, breastfeeding and attending POSYANDU

Factors	Growth			Development		
	Normal	Abnormal	P	Normal	Suspect	P
Caregiver						
Mother	86	127	0.001	168	70	1.000
Other	9	12		18	4	
Having KMS						
(+)	84	110	0.035	153	62	0.117
(-)	17	32		43	14	
Breastfeeding						
(+)	71	86	0.719	132	44	0.011
(-)	30	56		64	32	
Attending POSYANDU						
(+)	82	104	0.141	151	56	0.167
(-)	19	38		45	20	

David Morley pioneered KMS use in 1975 in Nigeria with a "road to health chart". This card contains a picture of weight curves for 0-5 year olds. This card is also equipped with several extension attributes and important records such as birth history, immunization, breast-feeding. Also included is a simple rule such as the ability psychomotor of child sitting (5-9 months), walking (9-18 months), speaking a word (10-21 months) and language skills a few words (18 months - 3 years). Because its functions are so important, it is adopted by UNICEF as an integral component of primary health services. KMS is an important tool for monitoring the toddler growth and development (Soetjiningsih 1995). In this study, ownership of KMS had a significant relationship with growth ($p = 0.035$) and no significant relationship with development ($p = 0.117$). This was because this study only assessed the ownership of KMS and did not assess the completeness of the contents of KMS. Most KMS-owned parents had incompletely updating the KMS contents; they only filled nutritional status and neglected to fill the development aspects. Previous research illustrated a strong relationship between parents' concerns and children's developmental status, certain kinds of concerns (e.g., fine motor or language) were found to sensitively detect developmental difficulties (Glascoe 1997).

Breastfeeding is the best nutrition for children because breast feeding has several virtues, such as sterile, always available in the optimum temperature, production tailored to the needs of babies and it contains antibodies that can inhibit the growth of germs and reduce the risk of allergies. By virtue of breast feeding will reduce morbidity in children, so it will have a long term effect on children growth (Freed 1995, Victoria 1998). The additional benefit of breastfeeding includes a close relationship between the infant and mother by skin contact to make the infant feel secure and it is very important to the development of psychological, social, emotional and cognitive in infant (Freed 1995, Simondon 2001, Victoria 1998). The proportion of infants who mastered the developmental milestones increased with duration and exclusivity of breastfeeding. Infants who had never been breastfed were 50% more likely to have gross motor coordination delays than infants who had been breastfed exclusively for at least 4 months (Sacker 2006). This study found a significant association between breastfeeding with toddler developmental ($p = 0.011$) and non significant relationship between breastfeeding and toddler growth ($p = 0.719$). These were because in this study the duration of breastfeeding was not studied. Wang reported that infants who were exclusively breastfed had significantly higher mean body weight at 4 months than those who were not exclusively breastfed (7.46 ± 0.74 versus 7.18 ± 0.89 kg, $p < 0.05$). At 1 year, mean Gross

Motor Development scores were 47.37 for exclusively breastfed children, compared with 30.68 for non exclusively breastfed children. Furthermore, 30 exclusively breastfed children had failed the Gross Motor Development Assessment, compared with 61 in the non exclusively breastfed group ($p < 0.05$) (Wang 1996).

The same findings were also found by Dewey that infants who only received breastmilk for the first 6 months of life crawled sooner and were more likely to walk by 12 months of age than infants who received solid foods starting at 4 months. Infants in the exclusively breastfed group also were marginally (but significantly) able to sit earlier than those who received solids by 4 months of age (Dewey 2001).

Growth Monitoring and Promotion (GMP) or in Indonesia called POSYANDU is a measurement activity of growth in children, recorded and then interpreted in order to provide counseling, therapy and follow up. There are 4 important elements of POSYANDU as follows: prevention, environmental change, dealing with environment and mother/community involvement. Prevention strategy is implemented prior to growth disorders by regular weighing, so that any growth disorder will be recognized immediately. The environmental change strategies are less fit for children through effective communication with the mother. Dealing with the environment is also important because that affects the overall growth and development of the child and mother/communities involvement in the efforts to optimize growth and development of the child (Soetjiningsih 1995). From this study, there was no significant relationship found between arrival at POSYANDU with growth ($p = 0.141$) and development ($p = 0.167$). This fact was because this study assessed only the parents and children who had arrived in POSYANDU, instead of the routine visits. Limitation of the study was that many toddlers with suspect of developmental delay were found because the Denver II was done during hospitalization which affected the test results.

CONCLUSION

Toddlers growth was influenced by caregiver and KMS, while the toddler development was influenced by breastfeeding.

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