



RESEARCH ARTICLE

URL of this article: <http://heanoti.com/index.php/hn/article/view/hn1212>

Relationship between Asphyxia History in Newborn with the Development of Infants Aged 3-12 months

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ABSTRACT

Development is the increasing ability or skill in the structure and function of the body more complex in a regular pattern and can be predicted as a result of maturation. The development is begun since in the womb until adulthood is prenatal period, infancy, and childhood, are followed by pre-adolescence, early adolescence, and late adolescence. One of the factors that influence the development of an infant or child is a childbirth factor in which the newborn infant has asphyxia. If the infant has asphyxia, especially in severe asphyxia that has a value of 0-3 APGAR can affect the infant's development in next life because it is associated with nerve damage due to lack of oxygen during birth process. This research had purposes to identify the relationship between asphyxia history in newborn and the development of infants aged 3-12 months. This research used retrospective design, by involving 100 infants aged 3-12 months which were taken by simple random sampling. Data collection was done by examining of infant development by using KPSP instrument checklist based on infant age and then the researcher searches the history of APGAR Score of (occurrence of asphyxia) when the infant was born in the midwife's medical records that helped childbirth. The result of Chi Square test = 0.021 (<0.05), so it could be concluded that there was a significant relationship between the history of asphyxia in newborns and the development of infants aged 3-12 months.

Keywords: Asphyxia, Development, Infants

INTRODUCTION

Background

The development is the increasing ability or skill in the structure and function of the body more complex in a regular pattern and can be predicted as a result of maturation (Soetjiningsih, 2004). One of the factors that influence the development of an infant or child is a childbirth factor in which the newborn infant has asphyxia. If the infant has asphyxia, especially in severe asphyxia that has a value of 0-3 APGAR can affect the baby's development in the next life. If within three months where the infant should have raised his/her head, the born infant with asphyxia is delayed (Ariks, 2006).

Developmental delays in infants, 2006 will fail to achieve further development in other words infant development is not appropriate to the baby's development should be (Soetjiningsih, 2004). The development is begun since in the womb until adulthood is prenatal period, infancy, and childhood, are followed by pre-adolescence, early adolescence, and late adolescence. In certain periods there is an acceleration period or deceleration period, and the rate of growth which different among the organs. One of those periods is the infancy of 0-1 years which is a decisive period of further development (Rumini, 2004).

Based on the 2005 IDHS data, the number of children in Indonesia is 26.1 million and about 5-10% of children have developmental disorders. While in Madiun from 52.286 children who participate in SDIDTK there are 26 deviations that consists of 17 children have KPSP deviation, 1 child has TDL disorder, 1 child has TDD disorder and 7 children have KMME disorder.

Based on preliminary survey which is conducted in Manisrejo, 8 incidences of asphyxia in newborn infants aged 3-12 months are tested for development with KPSP including 2 infants have the appropriate development, 5 infants have dubious development, and 1 infant has deviation of development.

Factors which influence the quality of growth children include internal factors such as race / ethnic or language, family, age, gender, genetic and chromosomal abnormalities. External factors include prenatal factors

(pregnant women's nutrition, mechanical toxins / chemicals, endocrine, radiation, infection, immunological disorders, embryonic anoxia and maternal psychology), and natal factors (infant complications in infants such as head trauma and asphyxia) and post-natal factors infant nutrition, congenital diseases, physical and chemical environment, psychology, endocrine, socio-economic, environmental care, stimulation, medicines etc.).

Asphyxia not only causes deaths but also a variety of complications, one of them is cognitive and motor deficits which disturb the development and decrease the quality of next life (Wandita, Setya 2006). New born Infants with asphyxia tend to affect the growth and development of their brain and body. It is caused by the brain is the most vital organs that requires oxygen intake. If three minutes or even five minutes the brain lacks of oxygen will cause damage to brain cells and other organs. If the brain cells are damaged, then the next developments will have problems (Ariks, 2006).

Purpose

The purposes of research was to identify the relationship between asphyxia history in newborn with development of infants aged 3-12 months.

METHODS

The type of this research was a case control study. The sample in this research was 100 infants from the total population of 150 infants aged 3-12 months in Manisrejo, Madiun which was selected by simple random sampling. The independent variable was the history of newborn infants asphyxia and the dependent variable was the development of the infant. Data of asphyxia history was collected from medical record, while data of development of infant was collected by using KPSP questionnaire, then analyzed using Chi square test.

RESULTS

Table 1. Distribution of the asphyxia history on newborn

Asphyxia history	Frequency	Percentage
Mild	83	83
Medium	17	17
Total	100	100

Table 1 shows that most of the newborns infants had mild asphyxia.

Table 2. Distribution of the development of infants aged 3-12 months

Infants development	Frequency	Percentage
Appropriate	68	68
Less Appropriate	32	32
Total	100	100

Based on the table 2 it is found that from 100 respondents, who have development according to age was 68% of infants.

Table 3. The relationship between asphyxia history and the development of infants aged 3-12 months

Asphyxia	Development of infant				Total	
	Appropriate		Less Appropriate		Frequency	%
	Frequency	%	Frequency	%		
Mild	61	73.5	22	26.5	83	100
Medium	7	41.2	10	58.8	17	100
Total	68		32		100	100

p-value = 0.021

The result of Chi square test was p-value = 0.021 (<0.05), so it could be concluded that there was a significant relationship between history of asphyxia in newborns and the development of infants aged 3-12 months.

DISCUSSION

The result of this research showed that there was a significant relationship between history of asphyxia in newborns and the development of infants aged 3-12 months. One of the factors that influence the development is the birth factor of asphyxia (Rusmil, Kusnandi 2005). Asphyxia not only causes death but also a variety of complications, one of them is cognitive and motor deficits which disturb the development and decrease the quality of next life (Wandita, Setya 2006).

The impact of asphyxia neonatorum is sometimes a minimal breath disorder until medium breath disorder but sometimes until brain damage occurs. Brain damage can also like as small brain damage causes tremor / trembling infants, which can persist for 24-48 hours and then stop spontaneously, medium brain damage can cause in lethargy, decreased of muscle tone and infants often have convulsions. This problem can happen for a week and usually also disappears spontaneously, severe brain damage often causes in decreased consciousness or unconscious infants, accompanied by opisthotonus, decreased breath or apnea frequency. These infants often suffer from permanent brain damage (Klaus, Marshall 1998).

New born Infants with asphyxia tend to affect the growth and development of their brain and body. It is caused by the brain is the most vital organs that requires oxygen intake. If three minutes or even five minutes the brain lacks of oxygen will cause damage to brain cells and other organs. If the brain cells are damaged, then the next developments will have problems (Ariks, 2006).

CONCLUSION

Based on the results of the study can be concluded that the history of asphyxia neonatorum is a determinant for infant development.

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