STIKES HANG TUAH SURABAYA
INC
INTERNATIONAL NURSING CONFERENCE

Proceeding Book

THE 1st INTERNATIONAL NURSING CONFERENCE

"Complementary Nursing Issues and Updates in 2015"

STIKES Hang Tuah Surabaya

Surabaya-Indonesia, June 6, 2015

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The 1st International nursing Conference

Complementary Nursing Issue and Updates in 2015

STIKES Hang Tuah Surabaya
June, 6th 2015

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GREETING FROM COMMITTEE PRESIDENT

On behalf of the commite it is very special honour to be your host in the first International nursing conference, which proides especially to student with an opportunity to share their ideas througt their selected paper on the theme " Complementary Nursing Issues and Updates in 2015

The Conference brings together academicians, practitioners, researcher as much as 200 participants from different provinces in Indonesia and different countries such as Malaysia, Japan and Republic of Tiongkok. So by gathering and interacting each of attendes here, I do believe that the fruit of this conference will contribute surely to nursing.

Finally, I congratulate those whose selected papers are included in the International proceeding, and I also would like to thank to the attendance keynote spaker, expertise, the committee and to all the participants.

Ns. Puji Hastuti, M.Kep
Committee President

CONGRATULATORY MESSAGE

It is a great honor for me to extend this opportunity to welcome all of you to International Nursing Conference 2015. This conference is organized by STIKES Hang Tuah Surabaya with a theme ***"Complementary nursing Issues and Updates in 2015".*** This is the first time for STIKES Hang TuahSurabaya to hold an International nursing Conference, and I do believe we may have other conferences that contribute to the development of nursing sciences.

This conference is timely and relevant in light of challenges we are facing in the next years ahead. It is to be noted that the ASEAN Economic Community will be due on the December 31st, 2015, allowing seven professions including nursing practitioners to work and practice across ASEAN countries, although further preparations under Mutual Recognition Arrangements (MRA) are still required.

On behalf of the institution STIKES Hang Tuah Surabaya, I would like to express my highest appreciation to the committee, who organized this International Nursing Conference 2015. It is my pleasure to warmly welcome all of you to this event, and also cordially welcome all overseas speakers to share their knowledge and experiences to all participants.

Eventually, I am confident that with the preparation and cooperation of all participants, the presence of distinguished guest speakers, the first international Nursing conference 2015 will be of great success.

Please enjoy your stay in Surabaya and wish you a wonderful time and valuable experiences from this event. Once again, It is our sincere thanks to all of you for taking time to join us.

Thank you.

Wiwiek Liestyaningrum, M.Kep
The Head of STIKES Hang Tuah Surabaya

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THE RELATIONSHIP BETWEEN GESTATIONAL AGE AND ASPHYXIA AMONG NEWBORN BABY

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ABSTRACT

Asphyxia is a condition in which a newborn baby can not breathe spontaneously and regularly soon after birth. One of the factors contributing to the incidence of neonatal asphyxia was gestational age. The purpose of this study is to determine the relationship between gestational age and asphyxia in newborns baby. This study design was correlational with cross sectional approach. Population was the mother who gave birth to a normal 107 respondents with a total sampling technique. Data obtained by observation and analyzed by Spearman correlation test. The results showed that the incidence of asphyxia in premature infants as much as 65% and in infants at term 35.29%. Statistical test results showed that p-value 0.038 < (α=0.05), which is mean there is a significant relationship between gestational age and the incidence of asphyxia among newborn baby. Maternal gestational age associated with the occurrence of asphyxia. Asphyxia can occur in premature infants and at normal term.

Keywords: Asphyxia, newborn baby, gestational age

Introduction

Today, the health of mothers and children is still not optimal. One indicator used is the number of infant mortality. In several studies on the world stage, including in Indonesia, showed that the mortality rate of mothers and newborns is still quite high. Based on Ani Yudhoyono stated that in Indonesia Infant Mortality Rate (IMR) is still relatively high at 35 per 1,000 live births, or about 175,000 infants die each year (Maryunani & Nurhayati, 2008). This can affect the acceleration of the achievement of objectives International agreements' Millennium Development Goals (MDGs "). One of the causes of neonatal mortality is asphyxia.

Asphyxia in newborns is a condition in which a baby can not breathe spontaneously and regularly soon after birth (Muktar, 2002). One of the factors contributing to the incidence of neonatal asphyxia was gestational age. Complications of this asphyxia was the cause of death in neonates. According to WHO every year about 3% (3.6 million) of 120 million births asphyxiated and nearly 1 million babies who have experienced the death of this asphyxia. Newborn mortality rate in Indonesia is caused by asphyxia is 30% after prematurity (DHO Profile Prop. Jatim, 2009). Referring to these

problems, it is necessary to study to determine whether there is a relationship between gestational age and asphyxia in newborns. The hypotheses in this study is there is a relationship between gestational age mother and asphyxia in newborns. The purpose of this study was to analyze the relationship of age gestation and asphyxia in newborns.

Literature Review

Pregnancy is a natural process that preceded the meeting ovum and sperm is called fertilization, followed by implantation until the fetus can grow and be born (Khosim, 2008). The gestation period ranging from ovulation until labor occurs during the 280 days (40 weeks) and no more than 300 days (43 weeks). Childbirth is the process of spending the products of conception have been quite a month through the vagina or through another way to help (Manuaba, 2002: 157).

By age pregnancy, labor is divided into five, namely abortion, immature birth, premature, mature (at term) and post-mature. Abortion is the interruption of a pregnancy before the fetus is able to live, with a gestational age > 22 weeks and the baby's weight > 500 grams. Immature birth is occurring at the expense of fetal gestational age between 22-28 weeks with the baby's weight between 500 grams - 999 grams. Premature labor is labor in gestational age 29-36 weeks with the baby's weight between 1000-2500 grams. Mature labor (at term) is delivery on the gestational age 37-40 weeks with the baby's weight> 2500 grams. Post mature delivery is a delivery that exceeds the expected time (Nugroho.T, 2010).

Babies who are born with a gestational age of less or more, usually potential for the occurrence of asphyxia. Infants with gestational age less than 37 weeks, weighing less than 2500 grams, is a major cause of neonatal death because the baby has an infection of central nerve system, asphyxia, birth trauma and intra ventricular hemorrhage. While pregnancy is overdue (over 42 weeks), will have the potential for post-term pregnancy complications, namely: oligo hydramnion, intra-uterine aspiration, and fetal distress.
Criteria of asphyxia are : (1) No asphyxia (Normal) if the value of Apgar score (AS) 7 - 10. Babies cry immediately after birth (2-3 seconds). (2) Asphyxia medium if the value of Apgar score 4 - 6. The condition where the baby's skin color blue because the circulation is less satisfactory, the baby needs to do more intensive suctioning, and giving oxygen to the cannula 1-2 liter/ min. 3. severe asphyxia Apgar score score 0 - 3. The baby's condition is very serious, baby limp, the heart muscle is weak and not breathing. Require active resuscitation and oxygen delivery is controlled by granting O_2 and intermittent positive pressure through the endo-tracheal tube (Sulistyorini, 2010).

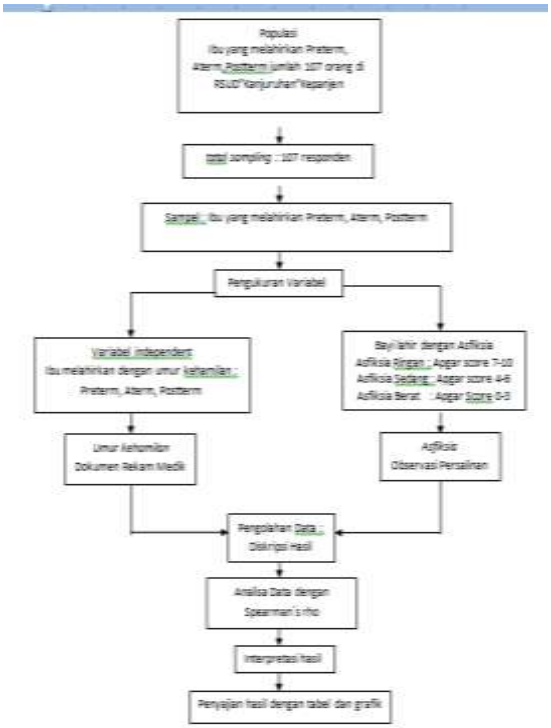
Methods

The design of this research is correlational with cross sectional approach. The study was conducted to analyze the relationship between gestational age with asphyxia in newborns. Population is the mother who gave birth normally in accordance with gestational age, both in pregnancy at term, pre-term and post-term, a number of 107 people.

Samples are all mothers who gave birth normally taken in total (total sampling). The independent variable was the gestational age and the dependent variable was asphyxia in newborns. Independent and dependent variables assessed simultaneously at any one time.

The operational definition of this study are as follows: Gestational age is a period ranging conception until the baby is born, count the first day of the last menstrual period (LMP). Newborn asphyxia is a condition where the baby can not breathe spontaneously and regularly soon after birth, measured by APGAR scores in the first minute and five minutes of the second. Observations carried out on mothers who give birth normally by age pregnancy and babies born. Do occur asphyxia or not. Gestational age data obtained from the patient's status documents (secondary data), while the data asphyxia done by direct observation, assisted by nurses who have been trained. Observation result set as follows: No asphyxia, asphyxia moderate and severe asphyxia. Figure 1 shows the framework of the research.

Figure 1 The research framework



The data were analyzed using univariate and bivariate. Univariate conducted to assess the gestational age of the mother and infant asphyxia. Gestation, are classified into three categories: gestational age pre-term (<37 mgg), term (37-42 mgg) and post-term (> 42 mgg). Asphyxia in newborns, classified into mild asphyxia or asphyxia (AS 7-10), moderate asphyxia (AS 4-6) and severe asphyxia (AS 0-3). Bivariate analysis conducted to analyze the relationship between gestational age with asphyxia. Analysis using the Spearman Rank test, with significance level of 95%. If Pv <α (0.05), then Ho is rejected, which means that there is a relationship between gestational age with asphyxia in newborns.

Results and Discussion

The study results are described in two groups, including the general data of respondents and specific data. The following general data

characteristics of respondents, including age of the respondents (maternal), education and the status of the mother's pregnancy, which may be associated with the occurrence of asphyxia in newborns.

1. Characteristics of the respondent (mother) based on age.
   The age of respondents ranged from 21 to 40 years, and most are at the age of 21-30 years (53%), as in Figure 2.

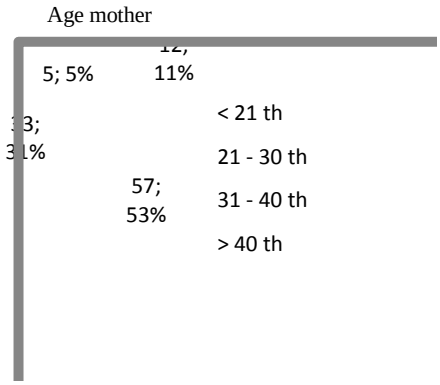
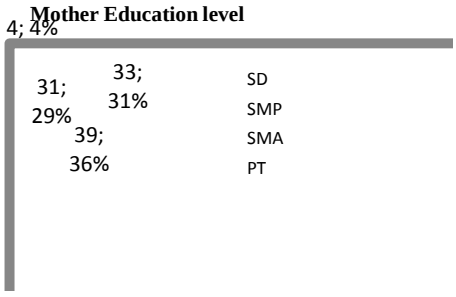


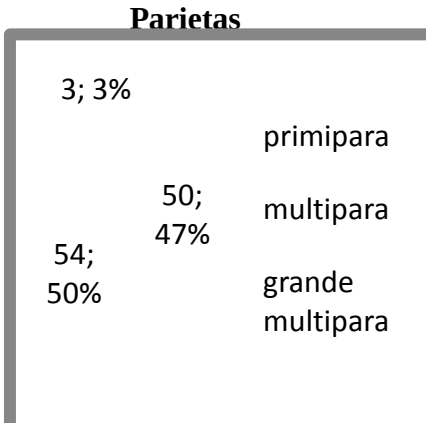
Figure 2 Characteristics of the Respondent based on age mother

2. Characteristics of the respondent (mother) based on Education
   Education respondents, varying from elementary to college, and most are junior some 36%, as in figure 3



Figur 3 Characteristic Mother Education Level

3. Characteristics of the respondent (mother) based on Pregnancy Status
   Based on the status of the pregnancy, it is known that most respondents pregnancy status is multiparous (50%), next is primiparous (47%), as in figure 4.



Figur 4 Characteristic of Pregnancy Status

The results of data analysis related to gestational age and the occurrence of asphyxia in newborns.

1. Age Pregnancy. Gestational age mothers who were respondents ranged from 24 mg of gestation up to 43 mg, which are classified into three, namely pregnancy preterm, term and post-term, as in figure 5.
   Based on Figure 5 can be seen that most babies are born at term (at term), which amounted to 79, 43% (85 respondents).

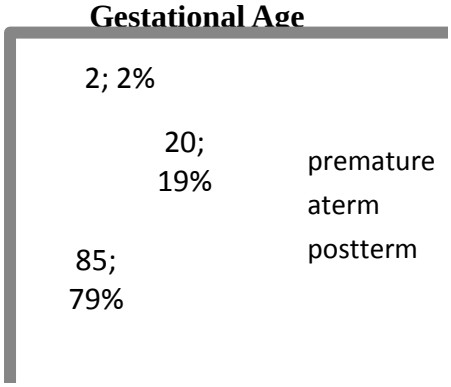


Figure 5 Category Age Pregnancy Mother

2. Asphyxia in Newborn By Age Pregnancy based on the gestational age of all babies are born and pregnancy by age group, can be seen Table 1 and table 2.

Based on table 1, it is known that quite a lot of infants with gestational age at term asphyxiated, amounting to 28.03% include moderate asphyxia were 21.49% and 6.54% severe asphyxia.

This is caused by the condition of women who experience fatigue and suffered complications while the second stage of labor.

.

Table 1 Distribution of asphyxia by age pregnancy

Age Pregnancy	Asphyxia Categories						Total Labor	%
	Severe Asphyxia		Moderate Asphyxia		Mild / Non Asphyxia			
	f	%	f	%	f	%		
Pre mature	5	4,67	8	7,48	7	6,55	20	18,70
At term	7	6,55	23	21,49	55	51,40	85	79,43
Post term	0	0	1	0,93	1	0,93	2	1,87
Total	12	11,22	32	29,90	63	58,88	107	100

Table 2 Distribution of asphyxia by gestational age group

Age Pregnancy	Asphyxia Categories						Total Labor	%
	Severe Asphyxia		Moderate Asphyxia		Mild / Non Asphyxia			
	f	%	f	%	f	%		
Pre mature	5	25	8	40	7	35	20	100
At term	7	8	23	27	55	65	85	100
Post term	0	0	1	50	1	50	2	100

Based on Table 2 is known that the gestational age group, the highest incidence of asphyxia in premature group, which amounted to 65% included severe asphyxia were 25% and moderate asphyxia were 40%.

3. Analysis of Relationship between Age Pregnancy with Asphyxia Newborn

   Based on the analysis of statistical tests obtained that p-value (0.038) < α (0.05) which means that Ho is rejected. These results indicate that there is a significant relationship between gestational age with asphyxia in newborns. Based on the analysis get r = 0.201 which means the strength of the relationship between gestational age with asphyxia is low. Results of the analysis are shown in Table 3.

Table 3
Results Analysis of Relationship between Age Pregnancy with asphyxia on Newborn

Variable	n	r	pv	Conclusion
Gestational Age Asphyxia	107	0,201	0,038	Pv (0,038)< α (0,05) Conclusion: Ho is rejected (there is a relationship between gestational age with asphyxia)

Discussion

Based on this research, it is known that maternal age is the most productive group (21-30 years). All mothers perform normal deliveries with gestational age are most at-term. With such conditions, should the mother group, not having babies born with asphyxia. In fact, quite a lot of pregnant women at-term, give birth to the baby's condition asphyxia.

Based on the age of the mother, it is not in accordance with the theory that the age of the mother during pregnancy, should be above 17 years and less than 45 years. This theory explains that pregnant women of reproductive age can prevent complications, because there has been a physical organ maturation and better prepared than the mother whose age is too young or too old. Mothers with age too young, reproductive organs not ready to accept the pregnancy, while mothers with age too old, they were not able to give birth well as the function and quality of organs that have been declined.

Based on the age group of the mother's pregnancy, it is known that the percentage of babies born with asphyxia is more common in premature infants (65%). Asphyxia in babies born prematurely due to whole organs have not been formed and functioned perfectly. This is consistent with the theory that the baby is premature, the entire organ has not been formed and functioning perfectly, especially in the respiratory system, because of the lack of production of surfactant in the lungs. Pulmonary surfactant serves to increase the surface tension of the alveoli, and prevent the collapse of the alveoli. Presence of a surfactant, will get cavities or spece between molecular and alveolar surface, thus reducing surface tension. Another theory explains that babies born preterm (<37 weeks), weighing less than 2500 grams, is the leading cause of infant mortality due to infections of the central nerve system, asphyxia, and intra ventricular hemorrhage.

Based on the analysis of the relationship between gestational age with asphyxia known that, there was a significant relationship between maternal gestational age with the occurrence of asphyxia. Asphyxia can occur in all age groups pregnancy, premature pregnancy, at-term and post-mature. Asphyxia can

occur at any gestational age Premature group, the potential for the occurrence of asphyxia more often than the other groups. Percentage of asphyxia in premature babies group 65%, then the baby postmature 50% and the last group of infants at term 35%. This shows the tendency that the younger gestational age were more potential for the occurrence of asphyxia than mature age. Asphyxia in premature infants caused by lack of maturation of the respiratory organs of the baby, while the baby at term and post-term, asphyxia occurs as a complication of several things including pregnancy complications, prolonged labor due to a large baby, the baby swallows amniotic fluid, the trauma of birth, or the mother experiencing physical illness such as heart disease, asthma, diabetes mellitus, and so forth. Women giving birth complications prolonged labor, usually experience severe fatigue, marked by contractions of the uterus weakens and flatulence. In the harsh conditions, fetal distress can occur even fetal death in utero.

In the analysis of the relationship between gestational age with asphyxia known that the relationship is weak with r = 0:21. In the analysis of the relationship between gestational age with the occurrence of asphyxia, it is known that the association was weak with r = 0:21. This relationship are positilf and have a weak connection strength. This occurs because of asphyxia caused not only by a factor of gestation mother, but also many other risk factors that can cause asphyxia. Other risk factors which may cause asphyxia include: Childbirth difficult (breech, twins, shoulder dystocia, vacuum extraction, forceps), amniotic fluid turbid, Congenital malformations, abnormal fetal heart rate, abnormal bleeding (placenta praevia or placenta solutio) , prolonged labor or obstructed, Pre eclampsia and eclampsia, infections or heat illness during labor, marked by an increase in temperature> 38^0 C which can lead to direct infection of the fetus in the womb, and the mother suffered from severe infection (malaria or TORCH).

Conclussion and Recomendation

Maternal gestational age associated with the occurrence of asphyxia. Asphyxia can occur in premature infants, at term dan post-term. In premature infants asphyxia more than a baby at term. Asphyxia can occur in all age groups pregnancy, premature pregnancy, at-term and post-mature. Asphyxia can occur at any gestational age Premature group, the potential for the occurrence of asphyxia more often than the other groups. The results shows, there is tendency that the younger gestational age were more potential for the occurrence of asphyxia than mature age.

Recommendations from this research are:

1. All nurses need to raise awareness of the occurrence of asphyxia in newborns of all age groups childbirth. The procedure remains the handling of newborns need to be adhered to by all nurses and implement them consistently.
2. For institutions (hospitals), need to set strict policies related to the handling of newborns through the development of management standards newborns, supervision, and provision of adequate facilities.

3. For society, especially mothers, need regular visits to health workers who are competent. This is important because not only premature babies who can suffer asphyxia, but also baby at term and post-term.

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