ISSN 2354-7642 (Print), ISSN 2503-1856 (Online)
Jurnal Ners dan Kebidanan Indonesia
Tersedia *online* pada:
http://ejournal.almaata.ac.id/index.php/JNKI

INDONESIAN JOURNAL OF NURSING AND MIDWIFERY

Education and Hospital Chart Related with Anemia among 3rd Trimester of Pregnant Women

Fatimah, Siti Arieska Shomadiyyah

Department of Nursing Universitas Alma Ata Yogyakarta
Jalan Brawijaya No. 99 Tamantirto, Bantul,Yogyakarta, Indonesia

Abstract

Anemia in pregnancy is a serious problem, especially in Indonesia. This research used quantitative with explanatory research. In the work area of Puskesmas Pajangan among 10 pregnant women, 7 was experienced of anemia. The purpose of this study was to determine the relationship between education, history of disease, age and the work of anemic mothers in the third trimester of pregnancy. This research was a quantitative research with explanatory research design. The population was 85 pregnant women in the third trimester at Puskesmas Pajangan. The independent variable was characteristics pregnant mothers and dependent variable was anemia in third trimester of pregnancy at Puskesmas Pajangan Yogyakarta. The research used a questionnaire that had been tested for reliability and validity. Bivariate analysis used was Pearson and Spearman. The results showed bivariate analysis p-value of age mother, education, disease history and work were 0.071, 0.003, 0.007, 0.097. In conclusion, there was relation between education and disease history with the genesis anemia, while age and job did not relate with anemia in third trimester of pregnancy.

Keywords: *characteristics, anemia in pregnancy*

Article info:
Articles submitted on August 15, 2017
Articles revised on December 26, 2017
Articles received in December 26, 2017
DOI: *http://dx.doi.org/10.21927/jnki.2017.5(3).224-229*

INTRODUCTION

Government efforts to reduce maternal mortality rate (MMR). In the year of 2010-2014, National Long-Term Development Plan (RPJMN) targeted to lowered Maternal Mortality Rate of 118 / 100,000 KH by 2014 and the Millennium Development Goals (MDGs) targetted of 102 / 100,000 KH by 2015 (1). One causes of death in mother is bleeding during childbirth, it is resulted from anemia during pregnancy. Pregnant women are chategorized in anemia when the Hemoglobin (Hb) content is less than 11 g% in trimesters 1 and 3 and Hb less than 10.5 g% in trimester 2. Therefore pregnant mother should have Hb more than 11 g% (2).

The rate of pregnancy anemia in Indonesia shows a high enough value. These data include 3.8% in the first trimester, 13.6% in the trimester II, and 24.8% in the third trimester (3). Meanwhile, according to Saifudin, the national anemia rate for pregnant women reached 63.5% (4). The incidence of maternal anemia increased in Yogyakarta in the year 2010-2014. The anemia data from 2010 (22.45%), 2011 (25.9%), 2012 (24.33%), 2013 (24.11%), while 2014 reached 28.1%. Based on these data, it is necessary

to optimize the distribution of tablets added blood and compliance of pregnant women taking tablets plus blood during pregnancy and puerperium (5).

In the year of 2014, pregnant women who visited Puskesmas Pajangan as many as 1,251 people. Pregnant women who examined Hemoglobin (Hb) during pregnancy in the last 10 months were 281 people (22.46%), it was deviden in 3 groups, those were Hb <8 g%, <11 g%, and > 11 g%. The data recorded the amount of each criteria were 1 person (0.35%), 95 peoples (33.80%), 186 people (66.19%), respectively. The most common cause of anemia is the lack of nutrients needed for the synthesis of erythrocytes, including iron, vitamin B12, and folic acid. Anemia as a result of malnutrition is called nutritional anemia, which is largely regarded as a result of iron deficiency or folic acid (6).

There are many factors that affect the incidence of anemia in pregnant women one of them is education (7). Maternal education influences behavior in making decisions, consuming food, and supplements or obtaining health services. Education is a characteristic of the community or respondents in the study.

Based on the research of Yanti, Sulistianingsih and Keisnawati in 2015, indicated that there was correlation between education with the incidence of pregnancy anemia in Pringsewu Lampung health center (8). Husnawati's research in 2015 also examined the socioeconomic status, parity and frequency of ANC, but these variables were unrelated to anemia in pregnancy. Therefore, researchers were interested in taking other characteristics that affect the anemia in pregnancy (9).

Other variables include age, education, history of illness and occupation may relate to the incidence of anemia in third trimester of pregnant women at Puskesmas Pajangan, Bantul, Yogyakarta. The purpose of this study was to determine the relationship between education, history of disease, age and the work of anemic mothers in the third trimester of pregnancy.

MATERIALS AND METHODS

The type of research was a quantitative research with explanatory research design. The study was conducted at Puskesmas Pajangan, Bantul, Yogyakarta. The study population was all third trimester pregnant women at Puskesmas Pajangan. By sampling using Accidental Sampling, 85 pregnant women of trimester III were selected. Inclusion criteria were all pregnant women who visit in their third trimester pregnancy examination to the Puskesmas, while the exclusion criteria were pregnant women with tuberculosis, hepatitis or in sickness. The study used questionnaires that have been tested for validity and reliability at Puskesmas Kasihan I, Bantul, Yogyakarta with 20 respondents. Independent variable of this research was pregnant woman characteristic, while dependent variable was anemia in third trimester pregnancy. Data analysis used Pearson Product Moment test on maternal age and education variable, while Rank Spearman test was used on the analysis of variable history of disease and work after the data normality test.

RESULTS AND DISCUSSION

Univariate Analysis

The research respondents were pregnant mother of Trimester III at Sedayu I Community Health Center that have been seen for several characteristics such as age, education, history of disease and work of pregnant mother.

Table 1. Distribution of Frequency of Pregnant Women in Trimester III at Puskesmas Pajangan

Age	f	%
Late Adolescent	40	47.1
Early adult	45	52.9
Total	85	100

Source: Primary Data Year 2015

Based on **Table 1,** the most respondents were aged more than 26 years old (26-36 years) or enter the early adult category, that was 45 people (52.9%). According to the Ministry of Health, the age group who has at risk were <20 years (26-36 years) or early adult age> 35 years (36-45 years) or late adult age. Maternal age in childbirth less than 20 years old or more than 35 years indicated increase of morbidity and mortality rate in both mother and baby. It may increase if the mother has anemia in pregnancy (10).

Table 2. Education Frequency Distribution of Third Trimester Pregnant Women at Puskesmas Pajangan

Education	f	%
High Education	12	14.1
Low Education	73	85.9
Total	85	100

Source: Primary Data Year 2015

Based on **Table 2,** the highest percentage of educations was respondents with low education level or high school level, as many as 73 people (85.9%). The result of this study was in line with previous research by Diatun that stated most of the respondents' education was high school as many as 13 people (40.6%) (11).

Women who are poorly educated or uneducated in Indonesia are more likely to have more than 2 children. They tend to have the higher risk of anemia in pregnancy. The level of education significantly affected the participation of family planning, including the number of children owned (12). This was also confirmed by the other results that there was a relationship between the level of education with the number of children born, with a high education people tended to have less number of children but more qualified compared to have many children but not neglected (13).

The high level of one's education will affect a good mindset and affect a person to pay attention to his health problems, because the level of education can affect behavior and produce many changes, especially knowledge in the field of health (14). Respondents with lower education tend to have an unfavorable mindset about iron tablets. In contrast, to respondents with higher education have a good mindset about health problems and easier to accept suggestions or new values suggested by health workers in order to maintain the health of herself and prospective baby. In addition, education also closely related to the formation of knowledge. People with low education will experience obstacles in the absorption of information so that the knowledge is also lower.

Table 3. Disease History Frequency Distribution of Third Trimester Pregnant Women at Puskesmas Pajangan

Disease History	f	%
High Risk	14	16.5
Low Risk	71	83.5
Total	85	100

Source: Primary Data Year 2015

Based on **Table 3**, most of disease history of respondents were low risk or has no history of diseases such as hypertension and asthma. A history of illness may have an indirect effect on pregnancy. It is also likely to affect the levels of Haemoglobin in pregnant women or anemia. Women who have poor health or women with previous pregnancy complications, require more high-level supervision during pregnancy as this may aggravate pregnancy if there is a disease that the mother has suffered before pregnancy. The illness that the mother has suffered can affect her pregnancy.

Table 4. Occupational Frequency Distribution of Third Trimester Pregnant Women at Puskesmas Pajangan

Occupational	f	%
Housewife	62	72.8
Entrepreneur	13	15.3
Employee	10	11.8
Total	85	100

Source: Primary Data Year 2015

Based on **Table 4,** most of respondents were housewives, those were 62 people (72.8%), respondents whose job status as self-employer was 13 people (15.3%), followed by respondents who have the employment status was 10 people (11.8%).

The result of this study was in line with previous research by Muslihah which states most of the respondents' occupation was housewife, including 35 pregnant women (64,8%) (15). Maternal work indirectly affect the knowledge. Knowledge of worker respondents better than that of unworker. This is because mothers working outside the home (formal sector) have better access to information, including getting information about the importance of hemoglobin examination in pregnant women (16).

Table 5. Occurrence of Anemia Distribution in Third Trimester Pregnant Women at Puskesmas Pajangan

Anemia status	f	%
Not Anemia	59	69.4
Anemia	26	30.6
Total	85	100

Source: Primary Data Year 2015

Based on **Table 5**, most of respondents were not anemic, as many as 59 people (69.4%), while the anemia was 26 people (30.6%). Anemia in pregnant women is defined when the Hb level is below 11 g%. Hb less than 11 g% in the first and third trimesters, Hb less than 10.5 g% in the second trimester. According to WHO, pregnant women should not have Hb less than 11 g% during pregnancy (2). According to Manuaba to confirm the diagnosis of anemia in pregnancy, anamnesis can be done (3). At anamnesis, will get complaints quickly tired, often dizzy, dizzy eyes, and complaints of greater nausea-vomiting in pregnancy.

Bivariate Analysis

The relationship between pregnant women characteristic with the incidence of anemia of third trimester pregnant women at Pajangan Health Center, Bantul, Yogyakarta is presented in **Table 7**.

Table 7. Relationship of Pregnant Women Characteristics with Anemia Occurrence in Third Trimester Pregnant Women

Independent Variable	Nilai *p*	Result
Age *	0.071	No correlation
Education *	0.003	There is correlation
Disease History **	0.007	There is correlation
Employment **	0.097	No correlation

Description: * Pearson Product Moment Test
** Spearman Rank Test
Source: Primary Data Year 2015

Based on the results in **Table 7**, there is a p value of 0.071 and 0.097, which meant that was no difference between maternal age and mother's work with anemia in pregnant women. This was in line with the research of Ngura Rai, Kawengian, Mayulu which stated that there was no relationship between hemoglobin (Hb) levels with occupational status (17). The results of the study between age and anemia were supported by other studies from Herawati and Astuti, that maternal age was not associated with nutritional anemia in pregnant women at Puskesmas Jalaksana Kuningan (18). Healthy reproductive age was between the ages of 20 to 35 years to minimize the occurrence of complications in pregnancy, it is included anemia in pregnancy. Based on the results of research conducted in Wayangah Puskesmas Pajangan most pregnant women have the average age more than 26 years and under 35 years.

Educational variables resulted p-value 0.003 and history of disease with p-value 0.007 which meant that there was a relationship between maternal education and history of disease with anemia in pregnant women. Supported to this results, the proportion of low education who experienced anemia of pregnancy was 80%, it was higher than that of who has higher education with anemia pregnancy, that

was 60% (18). Other studies in parallel also state that there was a relationship between education and the incidence of maternal primigravida anemia (19).

Education affected the incidence of pregnancy anemia. Education directly affects low knowledge of iron requirement in pregnant women. The level of education of pregnant women is related to the level of knowledge. The low level of maternal education influences the acceptance of information so that the knowledge of iron (Fe) becomes limited. Good knowledge by pregnant women will result in the prevention of pregnancy anemia, fulfillment of nutritional needs of pregnant women, and utilization of health services in the community.

Conversely, low education will development of a person's attitude in receiving information. It causes the mother does not know about the iron requirement of pregnant women and do not utilize the available health services. Lack of such information inhibits changes in healthy lifestyle, they prefer advice from parents who advise to avoid foods that fishy (8).

The results of the study showed p-value 0.007 which meant that there was a relationship between history of disease with anemia in pregnant women. This research was also in line with Nurhidayati's research, that there was no significant correlation of infectious disease status of pregnant mother with the incidence of anemia in pregnant woman in Work area of Puskesmas Tawangsari Sukohar (20).

CONCLUSIONS AND SUGGESTIONS

Based on the results, the characteristics of third trimester pregnant women at puskesmas Pajangan were from age mostly in early adult category, low education level or high school level down. They had a history of low-risk or no history of diseases such as hypertension and asthma. Most of them also had the occupation as housewives. The status of anemic respondents or pregnant women was largely in the category of not anemia. There was no relationship between maternal age and mother's work with anemia in pregnant women. While the mother's education and history of the disease associated with anemia in pregnant women.

The reduces of the anemia incidence in pregnancy may be done by improving counseling in early trimester pregnant women on how to prevent anemia in pregnancy as well as pay attention to the status of pregnant women, either directly or indirectly.

REFERENCES

1. Kemenkes RI. Pedoman Pelayanan Antenatal Terpadu. Jakarta; 2012.
2. Nugroho JH. Ginekologi dan Obstetri (obsgyn). Yogyakarta: Nuha Medika; 2010.
3. Manuaba IBG. Gawat-Darurat Obstetri-Ginekologi dan Obstetri Ginekologi Sosial Untuk Profesi Bidan. Jakarta: EGC; 2010.
4. Saifudin. Buku Acuan: Asuhan Persalinan Normal. Jakarta: EGC; 2011.
5. Dinas Kesehatan Pemerintah Kota Yogyakarta. Profil Kesehatan Tahun 2015 Kota Yogyakarta [Internet]. Yogyakarta; 2016 [cited 2017 Oct 24]. Available from: http://www.depkes.go.id/development/site/depkes/resources/download/profil/PROFIL_KAB_KOTA_2014/3471_DIY_Kota_Yogyakarta_2014.pdf
6. Prawirohardjo S. Pelayanan Kesehatan Maternal dan Neonatal. Jakarta: Bina Pustaka; 2009.
7. Nurdiansyah N. Pintar Ibu dan Bayi. Jakarta: Kawah Media; 2011.
8. Ari Madi Yanti D, Sulistianingsih A, Keisnawati. Faktor-Faktor Terjadinya Anemia pada Ibu Primigravida di Wilayah Kerja Puskesmas Pringsewu Lampung. J Keperawatan [Internet]. 2015 [cited 2017 Oct 24];6(2):79–87. Available from: http://download.portalgaruda.org/article.php?art

icle=424747&val=278&title=Faktor-Faktor Terjadinya Anemia Pada Ibu Primigravida Di Wilayah Kerja Puskesmas Pringsewu Lampung

9. Husnawati F. Analisis Faktor yang Mempengaruhi Tingkatan Anemia pada Ibu Hamil Anemia di Pusskesmas Sentolo II Kulon Progo [Internet]. Universitas 'Aisyiyah Yogyakarta; 2015 [cited 2017 Oct 24]. Available from: http://digilib.unisayogya.ac.id/209/1/FARIDAH HUSNAWATI NASKAH PUBLIKASI.pdf
10. Departemen Kesehatan RI. Pedoman Pelayanan Antenatal di Tingkat Pelayanan Dasar. Jakarta; 2009.
11. Diatun. Gambaran Tingkat Pengetahuan Ibu Nifas Terhadap Senam Nifas Di RSUD Panambahan Senopati Bantul Yogyakarta. Univwersitas Alma Ata; 2012.
12. Rochmah UM, Kuspriyanto. Pengaruh Tingkat Pendidikan, Pengetahuan, Pendapatan dan di Kecamatan Gondang Kabupaten Tulungagung. Swara Bhumi. 2016;3(3):372–6.
13. Fitri A, Trisnaningsih, Suwarni N. Hubungan Tingkat Pendidikan Penggunaan Kontrasepsi Dengan Jumlah Anak yang Dilahirkan Wanita PUS. JPG (Jurnal Penelit Geogr [Internet]. 2016 Apr 21 [cited 2017 Dec 25];4(2). Available from: http://jurnal.fkip.unila.ac.id/index.php/JPG/article/view/11174
14. Notoatmodjo S. Pendidikan dan Prilaku Kesehatan. Jakarta: Rineka Cipta; 2003.
15. Muslihah I. Gambaran Tingkat Kecemasan Pada Ibu Hamil Primigravida di Wilayah Kerja Puskesmas Mergangsan Yogyakarta. Universitas Alma Ata; 2011.
16. Yatina M. Gambaran Tingkat Pengetahuan Ibu Hamil Primigravida Tentang Kontrasepsi di BPS Pipin Haryanti. Universitas Alma Ata; 2014.
17. Ngurah Rai IGB, Kawengian SES, Mayulu N. Analisis Faktor-Faktor yang Berhubungan dengan Kadar Hemoglobin pada Ibu Hamil. J e-Biomedik [Internet]. 2016 [cited 2017 Oct 24];4(2). Available from: https://media.neliti.com/media/publications/67164-ID-analisis-faktor-faktor-yang-berhubungan.pdf
18. Herawati C, Astuti S. Faktor-Faktor yang Berhubungan Dengan Anemia Gizi pada Ibu Hamil di Puskesmas Jalaksana Kuningan Tahun 2010. J Kesehat Kartika [Internet]. 2016 [cited 2017 Oct 24];51–8. Available from: http://www.stikesayani.ac.id/publikasi/e-journal/filesx/2010/201012/201012-007.pdf
19. Ari Madi Yanti D, Sulistianingsih A, Keisnawati. Faktor-Faktor Terjadinya Anemia pada Ibu Primigravida di Wilayah Kerja Puskesmas Pringsewu Lampung. J Keperawatan [Internet]. 2015 [cited 2017 Dec 25];6(2):79–87. Available from: http://download.portalgaruda.org/article.php?article=424747&val=278&title=Faktor-Faktor Terjadinya Anemia Pada Ibu Primigravida Di Wilayah Kerja Puskesmas Pringsewu Lampung
20. Rohmah Dyah N. Analisis Faktor Penyebab Terjadinya Anemia Pada Ibu Hamil di Wilayah Kerja Puskesmas Tawangsari Kabupaten Sukoharjo [Internet]. Universitas Muhammadiyah Surakarta; 2013 [cited 2017 Oct 24]. Available from: http://eprints.ums.ac.id/24138/12/02._NASKAH_PUBLIKASI.pdf