RESEARCH ARTICLE
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The Incidence of Anemia and the Student Achievement Index at Midwifery Department, Poltekkes Kemenkes Aceh

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ABSTRACT

Anemia is a nutritional problem that is relatively difficult to overcome. The purpose of this study was to analyze the relationship between the events of Anemia and students achievement index in the Banda Aceh Midwifery program. The research design was a cross-sectional study, involving 163 participants, selected using simple random sampling. To get the data needed, this quantitative study used questionnaires, in-depth interviews and a hemoglobin device Quick-Check Set (Easy Touch) Testing System. Data were analyzed using Chi-square test. The results showed that there was a relationship between the incidence of anemia and the achievement index (p-value = 0.006). The incidence of anemia directly affects the students learning achievement indicating with the decreased immune system so it is susceptible to disease, decreases physical ability, learning activities thereby reducing their learning performance.

Keywords: anemia; student achievement index; midwifery students

INTRODUCTION

Anemia is a nutritional problem that is relatively difficult to overcome. This anemia is the state when the number of red blood cells or the concentration of nutrients and oxygen transporters in the blood (Hemoglobin / Hb) is not sufficient for the physiological needs of the body[1]. Anemia can be caused by many factors, but 50% of cases occur due to iron deficiency. The prevalence of anemia in women childbearing age (15-49 years) in Southeast Asia in 2011 amounted to 41.2% [2]. Prevalence anemia in Indonesia is 21.7% whereas in adolescents (15-24 years) is 18.4%[1]. The high prevalence of anemia is caused by several factors, i.e. low intake of iron and other nutrients such as vitamin A, vitamin C, folate, riboflavin and B1 [3]. Interventions are carried out to overcome anemia to this day revolving around supplementation or administration of iron tablets, other strategies are still not optimized such as iron fortification in food and counselling [4]. Anemia can be detected through symptoms that appear like pale, easily tired, palpitating, tachycardia (faster heartbeat) and shortness of breath [5]. anemia occurs when there is a reduction in healthy red blood cells that contain hemoglobin that occurs when the body does not produce enough red blood cells. Anemia can cause body health disorders such as weakness, fatigue, dizziness, lack of appetite and decreased body fitness, workability and immunity [6]. This disease is believed to be closely related relation to learning achievement. The impact of anemia can be felt by almost all good age groups of children and mature age. The incidence of anemia can reduce the concentration of learning in students. Adequacy of food consumption affects the ability of students to thinking, behaving, and academic achievement of students in the school [7]. Learning achievement is a very important educational output, which is used as a measurement of student cognitive ability. Learning achievement is the result of a series of teaching and learning processes that involve various aspects. These aspects can originate from the internal self or from an external college student. One indicator that can be used to assess success in the teaching and learning process is student learning achievement. Effect of anemia that occurs in adolescence is feared to have a bad impact

because anemia can cause decreased concentration in learning so as to cause low learning achievement in teenagers. The purpose of this study is to analyze the relationship between the incidence of anemia with the Student Achievement Index at Midwifery Department, Health Polytechnic of Banda Aceh.

METHODS

This study used a quantitative approach and a cross-sectional design. The study was conducted at the Department of Midwifery, Health Polytechnic of Banda Aceh, from February to August 2018. Sample size was 163 students, selected using simple random sampling. Data were collected using questionnaires, and in-depth interviews. Then the hemoglobin level check was performed when a teenager was not menstruating using a hemoglobin device Quick-Check Set (Easy Touch) Testing System. Data were analyzed using Chi-square test.

RESULTS

Characteristics of Respondents

Respondent characteristics are characteristics inherent in individuals, in this study covering the age of midwifery student and menarche.

Table 1. Distribution of student age and menarche age

Variable	Frequency	Percentage
Student age		
- ≤ 18	2	1
- 18	21	13
- 19	31	19
- 20	39	24
- 21	25	15
- 22	35	21
- 23	10	6
Total	163	100
Menarche Age		
- <10 year	3	1.8
- 10-13 Year	109	66.9
- 14-16 Year	51	31.3
- 17-20 Year	0	0.0
Total	163	100

The age of midwifery department students was dominated by 20 years as many as 39 people (23.9%). The age of menarche in the Midwifery Department was dominated by 10-13 years 109 people (66.9%).

Descriptive Analysis

From the results of the analysis of table 2, shows the incidence of anemia in college students. The midwifery department was dominated by 77 people without anemia (47.2%). While the Student achievement index in the midwifery department was dominated by very satisfying as many as 86 people (52.8%).

Table 2. Distribution of anemia and student achievement index

Variable	Frequency	Percentage
Anemia Syndrome		
- Severe Anemia	3	2
- Medium Anemia	45	28
- Mild Anemia	38	23
- No Anemia	77	47
Total	163	100
Achievement Indext		
- Fail	0	0.0
- Enough	6	3.7
- Satisfactory	16	9.8
- Very satisfactory	86	52.8
- Cumlaude	53	32.5
Total	163	100

Bivariate Analysis

Bivariate analysis was performed to determine the relationship of anemia with the student achievement index.

Table 3. Relationship between anemia event and student achievement index

Anemia	Students Learning achiement									
	Fail		Enough		Satisfactory		Very Satisfactory		Cumlaude	
	f	%	f	%	f	%	f	%	f	%
Severe	0	0	0	0	2	66.7	1	33.3	0	0
Medium	2	4.4	2	4.4	3	6.7	23	51.1	15	33.3
Mild	0	0	4	10.5	1	2.6	21	55.3	12	31.6
No anemia	0	0	0	0	10	13.0	41	53.2	26	33.8

Statistical test results with chi-square showed that the p-value of 0.006 ($p < 0.05$) (there was a significant relationship between the incidence of anemia with the student achievement index of student at Midwifery Department, Health Polytechnic of Banda Aceh.

DISCUSSION

Based on the results, there is a significant relationship between the incidence of anemia with the achievement index. This means that the incidence of anemia in midwifery major students will directly influential effect on learning achievement. Learning achievement is influenced by several factors including the ability to learn concentration. Student health condition disturbed, such as anemia, is one reason students cannot concentrate in full for a long time. Anemic conditions are indicated by levels of Hb low that causes the ability of red blood cells to reduce oxygen binding. Condition anemia can affect daily activities and can decrease concentration learning [8]. Lack of amount of hemoglobin in the body that functions to transport oxygen to the tissue makes teens experience weakness, lethargy, fatigue, fatigue, and neglect, often complain of dizziness and dizzy eyes, so that disrupt the learning process and finally a decline in ability and concentration of learning[9]. There are other factors that most determine student achievements such as motivation factors, internal environment, and student's external environment. Most students get nutritional knowledge from school but not applying it in everyday life because it is difficult to apply [10]. Also in young women, menstruation occurs so that it will lose a number of substances iron from his body [11]. Food consumption affects the ability of students to think, behave, and academic achievement of students in the school [7]. Protein, carbohydrates, and glucose have been shown to increase student concentration in learning school. Research conducted on school youth in Lampung shows that there is a relationship between nutritional status with learning achievement where students with status normal nutrition tend to have good learning achievement [12].

Anemic teenagers potentially greater memory loss and poor ability problem solving that will adversely affect learning achievement[13]. Anemia also affects the level of physical fitness of a person. This situation affects concentration and student achievement and influence work productivity among teenagers [14]. But in this study, not all Anemic female students have a low learning achievement index actor. Other causes of anemia are hemoglobin levels and diet. Content hemoglobin can affect student learning achievement. Students who experience anemia will cause the concentration of learning to decrease. Causes of anemia include low intake iron, absorption disorders, increased need for iron for the formation of red blood cells which occurs during puberty and bleeding [5]. You can also eat affect the tendency of anemia status, especially in college students who are in the growth period and have experienced menstruation. Researchers assume that it exists the relationship between the incidence of anemia with student achievement index as measured by IP scores even semester due to lack of oxygen in the student body. Deficiency oxygen causes students to feel sleepy often while following the learning process teaching, so as not to concentrate on learning.

CONCLUSION

The experience of anemia in midwifery students directly influenced the learning achievement in the Midwifery Department of Banda Aceh. The impact of the incidence of anemia decreases the body's resistance so that it is more susceptible to disease, decreases activities related to physical abilities and learning achievement. Anemia prevention can be done by supplementing or giving iron tablets, eating fibrous foods and counseling.

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