

The Role of Teachers and Structural Barriers in Adolescent Anemia Education in Surabaya Schools

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ABSTRACT

Background: Anemia in adolescents, particularly young women, remains a significant public health concern in Indonesia, with low adherence to iron supplementation being a key contributing factor. While previous interventions have focused primarily on individual compliance, the role of teachers as health educators in schools is often overlooked. This study aimed to analyze the determinants of teachers' intention to provide health education on anemia prevention in Surabaya high schools.

Method: A cross-sectional survey was conducted among 119 high school and vocational school teachers within the working area of Tanah Kali Kedinding Health Center, selected through simple random sampling from a total population of 170 teachers. Data were collected using structured questionnaires and analyzed using multiple logistic regressions to assess the influence of attitudes, subjective norms, and perceived behavioral control on teachers' intention to deliver health education.

Result : The analysis indicated that teacher' attitudes, subjective norms, and perceived behavioral control did not significantly influence their intention to deliver health education on iron supplementation. This indicates that structural and institutional factors, rather than individual psychological characteristics, primarily influence teachers' involvement in health education delivery. of the risks of e-cigarettes. Efforts to enhance adolescent anemia prevention should address structural barriers within the educational system. Policy support from schools and educational authorities is critical to institutionalizing health education as part of the teachers' formal responsibilities.

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INTRODUCTION

The increase in the prevalence of anemia in the productive age will affect the quality of life and its offspring. A young woman who suffers from anemia on an ongoing basis will pose a risk of giving birth to a low birth weight baby and stunting.(1) Based on data, it is known that the proportion of anemia in pregnant women aged 15-24 years is 84.6%.(2) Anemia is one of the problems of the triple burden of malnutrition, which is being experienced by several countries. The Southeast Asian continent has the highest cases of anemia in women aged 15-49 years, which is 234,000 cases, among which Indonesia is included in the top 10 countries with the highest prevalence of anemia. Based on Basic Health Research data from 2007 to 2018, the prevalence of anemia in adolescents in Indonesia shows an increasing trend from 6.90% to 32.0%, which is one of Indonesia. The global prevalence of anemia in women aged 15-49 years has decreased insignificantly from 2000 to 2019, from 31% to 30%.(3) Based on data from the World Health Organization (WHO), the prevalence of anemia

globally at the age of 15-49 years is 29.9%.(4) The Southeast Asian continent has the highest number of cases of anemia in women aged 15-49 years, which is 234,000 cases, among which Indonesia is included in the top 10 countries with the highest prevalence of anemia. Based on Basic Health Research data from 2007 to 2018, the prevalence of anemia in adolescents in Indonesia shows a trend of increasing from 6.9% to 32%.(5) Based on the 2023 Indonesian health survey, the prevalence of anemia in adolescents aged 15-24 years in Indonesia was 15.5%, with the proportion of female adolescents with anemia being 18%.(6)

According to WHO guidelines, low hemoglobin levels of less than 12 g/dl cause anemia in adolescent girls. This is influenced by the fact that during adolescence, there is an increase in the need for iron for the formation of hemoglobin, a decrease in iron intake, increased physical growth, and blood loss during menstruation.(7,8) Factors that cause anemia in adolescent girls in Indonesia include

adolescent girls' knowledge related to anemia, iron intake, nutritional status, length of menstruation, dietary habits, and the presence of infections such as malaria.(9) Low adherence to the consumption of blood-boosting tablets is one of the causes of adolescent girls in Indonesia experiencing anemia.(10) Based on a systematic review, the micronutrient intake of adolescent girls was generally found to be below the 2019 Recommended Dietary Allowance, particularly for iron (2.64–7.2 mg) and zinc (2.09–6.6 mg), both of which fall below the recommended nutritional adequacy level.(11) Other studies also report that Indonesian teenagers consume insufficient amounts of protein, fruits, and vegetables, while consuming excessive amounts of fast food.(12) Based on data from the 2023 Indonesian Health Survey, the prevalence of malnutrition (thinness) among adolescents aged 16–18 years in Indonesia is 6.6%, while the prevalence of stunting, based on height-for-age, is 20.1%.(6)

Compliance in taking blood supplement tablets does not only come from the acceptance of adolescent girls, but there is also a need for the role of teachers in supporting young women to consume blood supplement tablets regularly.(13) Teachers' support for the adherence to the consumption of blood supplement tablets in adolescent girls in the form of providing health information about blood supplement tablets and anemia as well as a reminder to take blood supplement tablets regularly.(14) Several studies have shown that teachers who often provide health information about blood-boosting tablets and anemia prevention can increase the knowledge of adolescent girls about consuming iron tablets.(15,16) Based on SKI 2023 data, the main reasons Indonesian teenagers did not complete their iron tablet intake in the past 12 months were that 31.4% forgot to take them, 13% felt it was unnecessary or not beneficial, and 30.3% stated that the taste and smell of the tablets were unpleasant.(6)

Teachers who often provide education about blood supplement tablets are related to adolescent girls' compliance in consuming blood supplement tablets.(17) Factors that affect teachers in providing health education in schools are influenced by intentions. Increasing students' health literacy is influenced by teachers' intentions in teaching health education in the classroom. Factors that affect teachers' intentions in providing health education to students are influenced by attitudes, subjective norms, and perceived behavioral control.(18) Perceived behavioral control influenced teachers' intentions to implement sexuality education, according to the study. It also reported that several teachers demonstrated a strong intention to provide sexuality-related health education.(20) Another study that applied the Theory of Planned Behavior to analyze teachers' behavior in delivering health education

found that attitudes, subjective norms, and perceived behavioral control significantly influenced teachers' intentions and actions in providing health education in the classroom.(21,22) Therefore, this study aims to identify the factors that influence teachers' intentions to provide education about iron supplementation as a preventive measure against anemia in adolescent girls, given that previous studies have primarily focused on social support for adolescent compliance.

METHOD

This research is quantitative in nature. This study uses a cross-sectional design. This study analyzed the influence of independent and dependent variables. The independent variables are knowledge, attitudes, subjective norms, and perceived behavior control. The dependent variable is the teacher's intention in providing health education to emphasize the importance of blood supplement tablets in adolescent girls.

The research location was carried out at an equivalent high school/vocational school in the area of the Tanah Kali Kedinding Health Center, Surabaya City. High schools and vocational schools in the working area of the Tanah Kali Kedinding Health Center consist of 3 schools. The school was chosen because it is included in the Tanah Kali Kedinding Health Center area with the highest number of cases of adolescents at risk of anemia in the city of Surabaya. The sample size in this study was determined using the formula for hypothesis testing the difference in proportions between two groups, resulting in a total of 119 teachers. The sampling technique employed was probability sampling, specifically simple random sampling. The inclusion criteria were all permanent teachers listed in the official school records, while the exclusion criteria included school administrative academic staff. Additionally, teachers who were not included in the school records were excluded.

The implementation of data collection was carried out for one month. Research data collection was carried out using two methods, namely online and offline. This is because when the study was taking place during school holidays, the researcher provided a questionnaire in the form of a Google Form that was filled out by the respondents themselves. Data processing in this study used IBM SPSS version 26 statistical software. In the multivariate analysis study, a binary logistic regression test was used to analyze the influence of attitude factors, subjective norms, and perceived behavioral control on teachers' intentions in providing education on the importance of blood supplement tablets in high school/vocational schools in the work area of the Tanah Kali Kedinding Health Center.

The questionnaire used in this study was adapted from the Theory of Planned Behavior questionnaire translated by Sudrajad (2018) and modified to fit the research topic. This questionnaire has been tested for validity and reliability in schools with similar characteristics to those of the research respondents, specifically 29 teachers at a high school in Surabaya. The validity test results on each question of each variable show that r is calculated $> r$ table, while the results of the reliability test are that the Cronbach's Alpha value is greater than r table.

The following research instruments consist of:

1. Knowledge

For the measurement of the knowledge variable, each of the 10 questions was scored with a maximum of 10 points, resulting in a total possible score of 100 if all answers were correct using the category of Arikunto (2010), which is divided into three, namely, Good: 76-100%, Fair: 56-75%, Less: $<56\%$.

2. Health Information Exposure:

This variable measures exposure to health information through a questionnaire, which categorizes responses based on the average score. Good: Respondent's T score ≥ 1.18 ; Less: Respondent's T score < 1.18 .

3. Attitude

This section consists of questions related to teachers' attitudes towards education on the importance of blood supplement tablets that can be assessed from Behavioral Beliefs, which has 5 question items, and Evaluation of Behavioral Outcomes, which has 5 question items. The researcher applied a semantic differential scale with scores ranging from -2 to +2 across five scale points. Categorization based on the average attitude score: if the score is ≥ 9.29 , it is categorized as Not Supported: Respondent's T score < 9.29 .

4. Subjective Norms

This section consists of questions related to teachers' subjective norms on the importance of blood enhancement tablet education, which can be assessed from Normative Beliefs, which has 4 question items, and Motivation to Comply, which has question items. The researcher applied a semantic differential scale with scores ranging from -2 to +2 across five scale points. The categorization of this variable uses the average score. The following are categorical, namely Support: Respondent's T score ≥ 6.36 , Not Support: Respondent's T score < 6.36 .

5. Perceived Behavior Control

This section consists of questions related to the teacher's perceived behavioral control towards the importance of blood supplement tablets that can be assessed from Control Beliefs, which has 5 question items, and

Perceived Power, which has 5 question items. The perceived behavior is calculated by summing the results of control beliefs and perceived power. The researcher applied a semantic differential scale with scores ranging from -2 to +2 across five scale points. The average score of perceived behavior control, 6.62, is categorical in perceived behavior control: Good: Respondent's T score ≥ 6.62 ; Low: Respondent's T score < 6.62

6. Intention

This section contains five questions that describe the teacher's intention in providing education on the importance of blood supplement tablets for young women. The researcher applied a semantic differential scale with scores ranging from -2 to +2 across five scale points. The categorization of the intention variable using the average score is: Strong intention: Respondent's T score ≥ 2.72 ; weak intention: < 2.72

This research has a research ethics permit issued by the Faculty of Dental Medicine, Universitas Airlangga, with the number 474/HRECC. FODM/V/2023 and a date of approval of May 15, 2023.

RESULT AND DISCUSSION

Based on the results of the research from 119 teachers, the characteristics of the respondents were obtained, which were presented in the form of a table 1. Based on the table, it shows that most of the teachers are 20-29 years old, female, and of non-civil servant status with a working period of less than five years. Most teachers have insufficient knowledge about anemia and the importance of blood supplement tablets in adolescent girls, and some teachers are also less exposed to health information about blood supplement tablets.

The findings showed that most teachers were unaware of anemia (62.2%) and were unaware of the side effects of consuming blood-boosting tablets (68.1%). This data reflects the low health literacy among teachers, especially regarding anemia in adolescent girls. In behavioral theory, namely the theory of planned behavior and the Health Belief Model, knowledge is a component that affects attitudes, subjective norms, and perceptions of perceived behavioral control, intentions, and behaviors. When teachers have knowledge but tend not to have confidence in delivering education or supporting healthy behaviors, they consume blood-boosting tablets in adolescents. This is in line with the study of Nugraheni et al. (2023) showing that low teacher knowledge about anemia has an impact on the lack of support for the consumption of blood-boosting tablets among adolescent girls.(24) Meanwhile, teachers play an important role in supporting the consumption of blood supplement tablets.(25)

Table 1. Background factors teacher

Variable	f	%
Age		
20-29 years old	60	50.4
30-39 years old	16	13.4
40-49 years old	9	7.6
≥50 years old	34	28.6
Gender		
Man	46	38.7
Woman	73	61.3
Employment status		
Civil servant	42	35.3
Non-civil servant	77	64.7
Length of work		
<5 years old	58	48.7
5-9 years	18	15.1
10-19 years old	9	7.6
≥20 years old	34	28.6
Knowledge		
Good	30	25.2
Enough	52	43.7
Less	37	31.1
Health information exposure		
Good	58	48.7
Less	61	51.3
Total	119	100

Table 2. Frequency distribution of the teacher's knowledge

Knowledge	True	Wrong
Definition of anemia	45 (37.8)	74(62.2)
The most at-risk group for anemia	93 (78.2)	26 (21.8)
Knowing about blood-boosting tablets	91 (76.5)	28 (23.5)
People who need blood supplement tablets	103 (86.6)	16 (13.4)
The benefits of blood booster tablets	77 (64.7)	42 (35.3)
The drink that inhibits the absorption process of blood plus tablets in the body	97 (81.5)	22 (18.5)
The impact of anemia on young women	62 (52.1)	57 (47.9)
The normal hemoglobin level for a young woman	52 (43.7)	67 (56.3)
The side effects of blood supplement tablets	38 (31.9)	81 (68.1)
The foods that contain iron of animal protein	63 (52.9)	56 (47.1)

Table 3. Frequency distribution of Theory of Planned Behavior

Variable	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Attitude					
1. Providing education on the importance of blood supplement tablets that I do can prevent anemia in adolescent girls	6 (5)	14 (11.8)	19 (16)	32 (26.9)	48 (40.3)
2. Providing education on the importance of iron tablets that I do can increase the compliance of iron tablet consumption of adolescent girls	5 (4.2)	10 (8.4)	27 (22.7)	43 (36.1)	34 (28.6)
3. Providing education on the importance of iron tablets that I can increase students' understanding related to the prevention of anemia in adolescents	6 (5)	7 (5.9)	20 (16.8)	39 (32.8)	47 (39.5)
4. Providing education on the importance of iron tablets that I do can improve students' attitudes regarding the importance of iron tablet	5(4.2)	7 (5.9)	22 (18.5)	58 (48.7)	27 (22.7)
5. Providing education on the importance of iron tablets that I do can motivate students to regularly consume iron tablet	7 (5.9)	8 (6.7)	27 (22.7)	49 (41.2)	28 (23.5)
6. For me, education about the importance of iron tablets in preventing anemia in schools is important.	0	6 (5)	18 (15.1)	46 (28.7)	49 (41.2)
7. For me, the increased adherence to taking iron tablet in young women is important	2 (1.7)	11 (9.2)	29 (24.4)	46 (38.7)	31 (26.1)
8. For me, increasing young women's understanding of anemia prevention is important	1 (0.8)	2 (1.7)	23 (19.3)	39 (32.8)	54 (45.4)
9. For me, the increased attitude of young women about the importance of iron tablets is essential	3 (2.5)	5 (4.2)	19 (16.0)	43 (36.1)	49 (41.2)
10. Increasing students' motivation to regularly consume iron tablet needs to support	3 (2.5)	4 (3.4)	26 (21.8)	45 (37.8)	41 (34.5)
Subjective Norms					
1. The principal advised me to do an iron tablet education for young women in the classroom.	2 (1.7)	13 (10.9)	33 (27.7)	37 (31.1)	34 (28.6)
2. The health workers of the local health center encouraged me to do iron tablet education for young women	1 (0.8)	8 (6.7)	32 (26.9)	35 (29.4)	43 (36.1)
3. Some of my fellow teachers are educating young women on the importance of iron tablets	3 (2.5)	9 (7.6)	25 (21)	53 (44.5)	29 (24.4)
4. Parents of students supported me in educating young women about the importance of the iron tablet	3 (2.5)	10 (8.4)	24 (20.2)	45 (37.8)	37 (31.1)

5. I want to do iron tablet education for young women in the classroom according to the advice of the principal	4 (3.4)	6 (5)	32 (26.9)	46 (38.7)	31 (26.1)
6. I want to educate young women on the importance of iron tablets in accordance with the recommendations of local health workers.	3 (2.5)	7 (5.9)	36 (30.3)	43 (36.1)	30 (25.2)
7. I want to follow the behavior of my fellow teachers to provide education on the importance of iron tablets to young women in school	3 (2.5)	8 (6.7)	35 (29.4)	44 (37)	29 (24.4)
8. I want to educate young women on the importance of iron tablets with the support of young women's parents	3 (2.5)	13 (10.9)	27 (22.7)	46 (38.7)	30 (25.2)

Perceived Behavior Control

1. The absence of policies regarding anemia prevention efforts in schools is an inhibiting factor in providing health education on the importance of iron tablets to adolescent girls in the classroom.	2 (1.7)	14 (11.8)	27 (22.7)	52 (43.7)	24 (20.2)
2. The absence of socialization or training programs from health care workers for teachers is an inhibiting factor in providing health education on the importance of iron tablet to adolescent girls in the classroom.	9 (7.6)	11 (9.2)	24 (20.2)	51 (42.9)	24 (20.2)
3. A busy teaching schedule is an inhibiting factor in providing health education on the importance of iron tablet to adolescent girls in the classroom	12 (10.1)	12 (10.1)	29 (24.2)	40 (33.6)	26 (21.8)
4. Adequate health media is a supporting factor in providing health education on the importance of iron tablet to adolescent girls in the classroom.	4 (3.4)	10 (8.4)	22 (18.5)	43 (36.1)	40 (33.6)
5. Adequate knowledge is a supporting factor in providing health education on the importance of iron tablet to young women in the classroom.	1 (0.8)	13 (10.9)	17 (14.3)	44 (37)	44 (37)
6. The absence of a policy regarding anemia prevention efforts in schools is an inhibiting factor that makes it difficult for me to provide health education on the importance of iron tablet to adolescent girls in the classroom.	5 (4.2)	12 (10.1)	39 (32.8)	41 (34.5)	22 (18.5)
7. The absence of socialization or training programs from health care workers for teachers is an inhibiting factor that makes it difficult for me to provide health education on the importance of iron tablets to adolescent girls in the classroom.	5 (4.2)	13 (10.9)	32 (26.9)	43 (36.1)	26 (21.8)
8. A busy teaching schedule is an inhibiting factor that makes it difficult for me to provide health education on the importance of iron tablets to young women in the classroom	4 (3.4)	10 (8.4)	38 (31.9)	45 (37.8)	22 (18.5)

9. Adequate health media is a supporting factor that makes it easier for me to provide health education on the importance of iron tablets to young women in the classroom.	5 (4.2)	6 (5.0)	41 (34.5)	42 (35.3)	25 (21.0)
10. Adequate knowledge is a supporting factor that makes it easier for me to provide health education on the importance of iron tablets to young women in the classroom.	6 (5.0)	7 (5.9)	38 (31.9)	41 (34.5)	27 (22.7)
Intention					
1. I will increase students' knowledge about anemia prevention efforts and the importance of consuming iron tablets through health education in schools	3 (2.5)	13 (10.9)	35 (29.4)	48 (40.3)	20 (16.8)
2. I will improve students' attitudes about anemia prevention efforts and the importance of consuming iron tablets through health education in schools	4 (3.4)	14 (11.8)	27 (22.7)	44.5(17.6)	21 (17.6)
3. I will increase students' motivation for anemia prevention efforts and the importance of consuming iron tablets through health education in schools	4 (3.4)	8 (6.7)	29 (24.4)	57 (47.9)	21 (17.6)
4. I will invite young women to regularly consume an iron tablet regularly at school	5 (4.2)	12 (10.1)	33 (27.7)	51 (42.9)	18 (15.1)
5. I will remind students to take iron tablet in class	12 (10.1)	10 (8.4)	38 (31.9)	50 (42.0)	9 (7.6)

Based on the table above, it indicates that there are still 47.1% of teachers who have an unsupportive attitude towards education on the importance of blood supplement tablets in adolescent girls. It shows that there are still 48.3% of teachers who have subjective norms that do not support educating adolescent girls on the importance of blood supplement tablets. The table also shows that there are still 45.4% of teachers who have behavioral control that is felt to be lacking related to the provision of education on blood supplement tablets to adolescent girls. Furthermore, in the region, there are still 41.2% of teachers who have weak intentions in providing blood supplement tablet education to adolescent girls at school.

Table 4 shows that teachers with more supportive attitudes tend to have stronger intentions, while those with less supportive attitudes tend to have weaker intentions to provide education on the importance of iron tablets to adolescents in schools. A p-value of < 0.05 indicates a significant relationship between teachers' attitudes and their intention to provide education on the importance of iron tablets

to adolescent girls at school. The Phi coefficient value of 0.000 suggests that the strength of the relationship between attitude and intention is weak. The Prevalence Ratio (PR) value is 12.159, indicating that teachers with less supportive attitudes are 12 times more likely to have weak intentions compared to those with supportive attitudes.

For the subjective norm variable, the findings show that teachers with more supportive subjective norms tend to have strong intentions, while those with less supportive subjective norms tend to have weaker intentions. A p-value of < 0.05 indicates a significant relationship between subjective norms and teachers' intention to provide education on the importance of iron tablets to adolescent girls. The Phi coefficient value of 0.000 indicates a weak relationship between subjective norms and intention. The PR value of 10.468 suggests that teachers with less supportive subjective norms are 10 times more likely to have weak intentions compared to those with supportive subjective norms.

Table 4. Analysis of the relationship between attitudes, subjective norms and perceived behavioral control with teachers' intentions in providing health education.

Variabel	Intention				P-value	PR
	Strong		Weak			
	n	%	n	%		
Attitude						
Support	53	84.1	10	15.9	0.000	12.159
Not Supported	17	30.4	39	69.6		
Subjective norm						
Support	51	83.6	10	16.4	0.000	10.468
Not supported	19	32.8	39	67.2		
Perceived behavior control						
Good	51	78.5	14	21.5	0.000	6.711
Less	19	35.2	35	63.8		

Regarding the perceived behavioral control variable, teachers with stronger perceived control tend to have stronger intentions, while those with lower perceived control tend to have weaker intentions. A p-value of < 0.05 indicates a significant relationship between perceived behavioral control and teachers' intention to provide education on the importance of iron tablets to adolescent girls. The Phi coefficient of 0.000 shows a weak relationship between perceived behavioral control and intention. The PR value of 6.711 indicates that teachers with lower perceived behavioral control are 6.7 times more likely to have weak intentions compared to those with higher perceived behavioral control.

The table 5 presents the influence of attitudes, subjective norms, and perceived behavioral control on teachers' intentions in providing education, based on the results of the regression test analysis. Based on the table 5, it shows that a significant value of > 0.05 means that there is no influence of attitude variables, subjective norms, and perceived behavioral control on teachers' intentions in providing education on the importance of blood supplement tablets in adolescent girls at school. According to Ajzen in 2005, if a person believes that a certain behavior can yield

positive results, then the person will tend to be supportive of that behavior. On the other hand, if a person believes that a certain behavior can lead to negative results, then that person will tend to be unsupportive of that behavior.(26)

Teachers and principals who have a positive attitude towards the provision of health education tend to increase health promotion in schools.(27) Teachers with a positive attitude will be motivated to strategize and implement health education interventions in schools.(28) The attitude of teachers in carrying out their role as health promoters in schools is very important because it is the background for the success of programs in schools.(29)

In this study, there are still teachers who do not support the education of the importance of iron tablets for young women at school. This can be seen in the negative behavioral beliefs of teachers regarding the benefits of providing blood supplement tablet education to adolescents at school.

There are some teachers who do not agree with the provision of health education on blood supplement tablets at school, which can prevent anemia in adolescents and increase compliance, knowledge, attitudes, and motivation of students to consume iron tablets regularly.

Table 5. Analysis of the influence of attitudes, subjective norms, and perceived behavioral control on teachers' intentions in providing health education.

Independent Variables	P-Value	OR	95% CI		R ²
			Lower	Upper	
The teacher's attitude	0.054	2.721	0.982	7.539	0.343
Subjective norms of teachers	0.120	2.217	0.813	6.044	
Teacher-perceived behavioral control	0.792	1.125	0.467	2.711	

Teachers have a negative assessment of the provision of blood supplement tablet education, which can prevent anemia and increase compliance, understanding, and motivation of adolescent girls in the consumption of iron tablets. The teacher considered that the behavior of providing health education about iron tablets was not good for him and the surrounding environment so that this behavior did not need to be done. This is because teachers feel that providing iron tablet education in schools is not their responsibility to carry out this behavior. Teachers think that school health unit personnel have an obligation to conduct education related to health. However, this is not in line with the statement that the role of teachers in schools is not only as a teacher teaching subjects but also as a motivator for young women to regularly consume iron tablets and make efforts to prevent anemia from an early age.(30)

Individual beliefs are increasingly strong in the availability of resources and opportunities they have in relation to certain behaviors. The more significant the importance of these resources, the more pronounced the perception of individual control over behavior.(31) The interview results indicated that teachers felt incompetent in delivering material and educating students about the importance of blood supplement tablets in schools. According to the guidelines for anemia prevention among adolescents, teachers serve as an extension of health workers in promoting health at schools. This study found that 47.1% of teachers had low intention to provide health education. This finding highlights a gap between the expected role of teachers in health promotion and their readiness to fulfill it. The low intention among teachers to deliver health education may be attributed to their lack of knowledge, skills, and confidence in effectively conveying health-related material to students. Therefore, training programs are needed to help teachers understand the importance of health education and enhance their capacity and motivation to integrate it into classroom learning. A study by Sabrifha also emphasized that teachers play a crucial role in supporting students' mental health through responsive, empathetic, and inclusive interpersonal interactions. Consequently, improving the quality of teacher-student communication is essential, which can be achieved by providing training in interpersonal skills and enhancing teachers' knowledge of health issues.(32)

Based on the results of interviews with several teachers, it was found that inhibiting factors that affect teachers' confidence in providing education include the absence of policies from schools, no socialization programs from local health workers to teachers, a busy teaching schedule, the lack of availability of educational media, and inadequate knowledge about blood supplement tablets. As

a result, some teachers struggle to educate young women at school about the importance of blood supplement tablets.

The results of interviews with several teachers revealed that heavy teaching workloads and the fact that most subjects are not integrated with health topics have led teachers to deprioritize delivering health information in schools. Teachers also perceived that all health-related information is the responsibility of health professionals, not theirs. Health professionals are, in fact, required to provide education to teachers in schools regarding anemia and the importance of iron supplementation. In this study, local health workers had conducted education sessions on anemia and the importance of iron tablets for adolescent girls. However, these activities did not include teachers. This conclusion is evident from the fact that many teachers were still unfamiliar with the definition of anemia, normal hemoglobin levels, animal-based sources of iron, and the possible side effects of iron tablet consumption.

The implementation of adolescent health education in schools—whether by teachers or school health unit officers—is often hindered by cultural factors present in the surrounding school environment.(33) Interviews with school health teachers revealed that some parents still do not support such programs, as they believe that traditional medicine is more effective than medical treatments. The results of the binary logistics regression test indicated that there was no influence of attitudes, subjective norms, and perceived behavioral control on teachers' intentions in providing education on the importance of blood tablets to students at school. This result means that there is no influence of attitudes, subjective norms, and behavioral control felt by teachers on teachers' intentions in providing health education. Mothers' subjective norms do not influence their intention to teach their children to brush their teeth.(34)

This research does not align with Ates (2019), which asserts that subjective norms and perceived behavioral control significantly influence teachers' intentions regarding the provision of health education.(21) Subjective attitudes and norms play a significant role in influencing the intention to engage in a clean and healthy lifestyle. Behavioral control affects individual intentions to engage in peer education activities focused on drug abuse prevention.(33)

The regression test results revealed that the attitude variable had no effect on the teacher's intention. This study shows that teachers might not distinguish between supportive and unsupportive colleagues. In this case, teachers' attitudes play an important role in the success of health promotion programs in schools. Teachers' attitudes are crucial for their effectiveness as health promoters in schools, as these attitudes significantly contribute to the

success of health promotion programs.(29) However, teachers carry out health promotion programs poorly in schools because there are no additional incentives, and they feel that it is not their job as teachers.

The regression test results revealed that the subjective norm variable had no impact on the teacher's intention. The subjective norms in this study describe how support for social references exists among teachers. The principal and local health workers serve as the driving forces or motivations for teachers in carrying out this behavior. This is because the principal has an important role in influencing the behavior of teachers in schools. If the principal instructs teachers to educate about the importance of iron tablets in schools, it will increase the motivation and intention of teachers in providing health education in schools. This is because in an effort to prevent anemia, it is necessary to involve schools by providing health education to students.(35)

In the results of the regression test, it was found that the behavior control variable felt by the teacher showed no influence on the teacher's intention. The results of the cross-tabulation showed that the more teachers have effective behavior control, the more teachers will have strong intentions. Perceived behavior control, describes the difficulty or ease of doing a behavior. According to Azjen (2005), perceived behavior control is the most important factor in the formation of intentions because if a person is confident that he can control his behavior, most teachers tend to have a strong intention to do so. In this study, some teachers still experience difficulties in overcoming obstacles such as a tight teaching schedule and the lack of counseling from health workers about preventing anemia and the importance of blood supplement tablets for adolescent girls. The difficulties felt by teachers can affect teachers' intentions and behaviors in providing health education at school. A person cannot perform a behavior based on intention if he does not have control over his behavior. This means that behavior control will determine whether the behavior can or cannot be performed by the individual. Therefore, support in the form of policy development by both schools and the local education office is needed to promote health education efforts within the school environment. In addition, collaboration with local health centers is essential to enhance teachers' knowledge regarding the prevention of anemia among adolescents.(35)

This research presents multiple limitations. The study did not thoroughly investigate the factors contributing to the low intention of some teachers to deliver health education. The restricted sample size may influence the applicability of the findings to the wider teacher population.

This study has not thoroughly investigated institutional or structural factors, including school policy support and the role of school principals in health education. Future research should utilize a mixed-methods approach to achieve a more thorough understanding of teachers' roles in delivering health education in schools.

CONCLUSION

There is no significant influence of attitudes, subjective norms, or perceived behavioral control on teachers' intentions to provide education about the importance of iron supplement tablets to adolescent girls in schools. Moreover, the majority of teachers still have limited exposure to information or insufficient knowledge regarding anemia prevention in adolescents.

However, some negative attitudes among teachers persist, contributing to their weak intentions to educate students about the importance of iron tablets. Teachers' intentions to provide health education about iron tablet consumption are affected by external factors, including the lack of supportive school policies, high workloads, insufficient training, and the failure to integrate health topics into the school curriculum. Researchers propose the subsequent course of action: Anemia in adolescents, particularly among young women, remains a significant public health concern in Indonesia, primarily attributed to inadequate adherence to iron supplementation. The principal may establish a written policy to ensure teachers engage in health education concerning the significance of blood supplement tablets.

Local health workers can provide education to teachers regarding anemia prevention programs targeted at adolescent girls. The content will encompass the definition of anemia, standard hemoglobin (Hb) levels in adolescent females, adverse effects associated with iron tablet intake, animal sources high in iron, and vitamins that facilitate iron absorption. This activity aims to improve teachers' comprehension and promote social support for students in the consistent use of blood-boosting tablets. Health professionals can utilize health media to enhance teachers' understanding by developing nutritional health modules that incorporate this information. The researcher may conduct additional studies on behavioral variables and investigate teachers' behaviors in delivering health education regarding the significance of blood supplement tablets through qualitative research.

Conflict of Interest

No potential conflicts of interest relevant to this article were reported

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