



Research

# The Compliance with Blood Adding Tablet Consumption Based on Theory of Planned Behavior

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## A B S T R A K

**Background:** In Indonesia, 23.9% of adolescent women between the ages of 15 and 24 suffer from anemia. Anemia occurs at all phases of human development and is more prevalent in young women, including female students. Compliance with iron supplement consumption is a form of behavior used to prevent and treat anemia, so the tendency of young women to adhere to regular iron supplement consumption can be analyzed using the Theory of Planned Behavior.

**Purpose:** Understanding the relationship and influence of attitudes, subjective norms, intentions, and behavioral control on female students at Al-Ikhlas Islamic Boarding School Ujung Bone's adherence to the consumption of blood-supplemented tablets to prevent anemia in 2023.

**Methods:** A quantitative investigation employing a cross-sectional design. Chi-square is the statistical test that is used. The research instrument was a structured questionnaire form, and 120 female students served as the sample.

**Results:** At Al-Ikhlas Islamic Boarding School Ujung Bone in 2023, there is a statistically significant relationship between attitudes, subjective norms, intentions, and behavioral control and adherence to blood-added tablet consumption.

**Conclusion:** The majority of female pupils who adhere to the consumption of iron tablets demonstrate obedient behavior. Researchers propose that KIE can enhance the knowledge of female students. The puskesmas can provide additional health education regarding the adverse effects female students experience after taking iron tablets. Future researchers can use mixed methods by conducting FGDs with female students, instructors, and program implementers. In addition, assess Hb levels to determine the effect of taking iron tablets.

## INTRODUCTION

Anemia is a medical illness characterized by a deficiency in the quantity of red blood cells and their ability to transport oxygen, resulting in an inadequate fulfillment of the body's physiological requirements. According to the cited source, the established threshold value for anemia in adolescent girls is 12 gr/dL, whereas for adolescent boys, it is 13 gr/dL [1]. According to the World Health Organization (WHO), the global prevalence of anemia among women of childbearing age (WUS) between the ages of 15 and 49 in 2021 is reported to be 29.9% [2]. In the interim, it was observed in Riskesdas 2013 that the occurrence of anemia among females aged 15-24 years in Indonesia amounted to 23.9%, surpassing the prevalence among males which stood at 18.4% (Ministry of Health of the Republic of Indonesia, 2013). Furthermore, there has been a notable rise in the occurrence of anemia among adolescent females in the year 2018, with a recorded prevalence rate of 27.2%. Similarly, anemia among adolescent boys has also experienced an increase, reaching a prevalence rate of 20.3% [3]. According to a study, there is

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a significant disparity in the prevalence of anemia between adolescent girls and boys, with girls being 10 times more likely to have this condition [4].

According to data provided by the South Sulawesi Provincial Health Service, the prevalence of anemia among adolescent girls is reported to be 33.7% [5]. According to data from the Ministry of Health of the Republic of Indonesia in 2013, the prevalence of anemia among teenage girls aged 15 years and above in South Sulawesi is reported to be 10.3%. According to data obtained from the Bone District Health Service in 2018, the prevalence of anemia among teenagers was recorded at 29.76%. Subsequently, in 2019, this figure decreased to 22.70% [6]. Al-Ikhlâs Ujung Bone Islamic Boarding School is an educational institution situated within the jurisdiction of the Dua Bocoe Community Health Center. According to the findings of the Hb tests conducted at the Dua Bocoe Community Health Center in 2021, it was observed that out of the 115 female students who underwent the examination, a total of 60 students at the MA level were diagnosed with anemia. Among the female students at the MTs level, a total of 23 individuals, accounting for 13.8% of the cohort, were found to be anemic. In contrast, out of the 55 female students at the same level, 17 individuals, representing 9.35% of the group, were identified as anemic.

The occurrence of anemia in adolescent girls has been found to have detrimental effects on various aspects including diminished immunity, impaired focus, reduced physical fitness, and decreased productivity [7]. Untreated anemia in adolescent girls can have significant implications on pregnancy and childbirth outcomes, including but not limited to abortion, low birth weight (LBW) infants, impaired uterine contraction during labor, and an increased risk of postpartum hemorrhage leading to mortality. The relationship between a mother and kid has been extensively studied [8], [9]. The Indonesian government has implemented measures to address and manage anemia among adolescent girls. One of the strategies involves emphasizing the distribution of blood supplement tablets, with a recommended dosage of one tablet per week. The objective of this initiative is to decrease the prevalence of anemia in adolescent girls by 50% by the year 2025. Additionally, educational institutions play a crucial role in the implementation of this program [3].

The reported prevalence of administering blood supplement tablets to adolescent females in Indonesia for the year 2021 is documented as 31.3 [10]. Based on the 2018 Riskesdas data, it was shown that 85.9% of young women between the ages of 10 and 19 in South Sulawesi took blood supplement tablets. The percentage of adolescent girls who were provided with blood supplement tablets at school was 87.6%. The data reveals that a significant majority, specifically 98.7%, of students who received blood supplement tablets ingested less than 52 pills. This indicates that only a small minority, amounting to 1.3% of students, adhered to the prescribed dosage of 52 tablets per year. The study identified three primary factors contributing to non-compliance with prescribed blood supplement pill intake among participants, as shown by the 52-item survey. These factors include forgetfulness (20.9%), dissatisfaction with taste and smell (22.2%), and a perception of the tablets as unneeded (29.6%). The user has provided a reference to support their statement. According to data provided by the South Sulawesi Provincial Health Service, a total of 338,550 adolescent females between the ages of 12 and 18 were included in the study. From January to May 2020, it was observed that 260,071 individuals, accounting for about 76.8% of the sample, received blood supplement tablets. Similarly, in the Bone Regency area, out of the 31,288 teenage girls included in the study, a total of 26,858 individuals were found to have received blood supplement tablets.

Al-Ikhlâs Ujung Bone Islamic Boarding School holds the distinction of being the largest Islamic boarding school inside the Bone Regency. Furthermore, it is also recognized as one of the ten largest Islamic boarding schools in the South Sulawesi Province [11]. According to statistics obtained from the Bone District Health Service at the Al-Ikhlâs Ujung Bone Islamic Boarding School, a total of 297 female students are expected to get blood supplement tablets in the year 2022. Among these students, 147 are enrolled at the MTs level, while the remaining 150 are enrolled at the MA level. This finding indicates a lack of understanding among young women regarding the utilization of blood supplement pills as a means to prevent and manage anemia. The extent to which adolescent girls and women of reproductive age (WUS) adhere to the consumption of blood

supplement pills serves as a measure of the effectiveness of the anemia prevention and control program targeting this population [12].

The analysis of adherence to the use of blood supplement pills can be conducted through the application of behavioral theories, such as the Theory of Planned Behavior (TPB). In line with the theory of planned behavior, adherence to the consumption of blood supplement tablets among young women can be seen by their consistent ingestion of those tablets. The compliance behavior observed in young women can be attributed to their inclination to ingest blood supplement tablets [13].

According to the findings of a study [14], it was observed that young women who possess a positive attitude have a significantly greater inclination, approximately 3.58 times higher, to ingest blood supplement pills in comparison to their counterparts who hold a negative attitude towards the consumption of such tablets. This study additionally demonstrates that adolescent females who exhibit high levels of behavioral control are 3.96 times more likely to express a favorable intention to adhere to a regular regimen of blood supplement tablet consumption, in comparison to adolescent females with low levels of behavioral control in relation to the consumption of blood supplement tablets. According to a study conducted by [15], teacher support or subjective norms have been identified as key factors affecting the level of compliance among young women in their consumption of blood supplement tablets. Hence, there is a scholarly interest in investigating the adherence to blood supplement tablet use among female students at the Al-Ikhlâs Ujung Bone Islamic Boarding School, utilizing the idea of planned behavior as a theoretical framework.

## METHOD

The present investigation employs an observational methodology, utilizing a quantitative analytical framework within a cross-sectional study design. The present study was carried out at the Al-Ikhlâs Ujung Bone Islamic Boarding School over the period of May to June 2023. The sample for this study consisted of 368 female students enrolled at the Al-Ikhlâs Ujung Bone Islamic Boarding School during the 2022/2023 academic year. The process of sampling was conducted utilizing a formula for a two-proportion hypothesis test, resulting in the acquisition of a sample size consisting of 120 samples. The sampling inclusion criteria included that respondents must be female students residing in the Islamic boarding school/dormitory, PP Al-Ikhlâs Ujung Bone, during the academic year of 2022/2023. Additionally, respondents must fall within the age range of 12 to 18 years and express their willingness to participate as research subjects. The research in question has received approval from the Health Research Ethics Commission of Universitas Muslim Indonesia under the reference number 258/A.1/KEPK-UMI/VII/2023.

The variables examined in this study encompass attitudes, subjective norms, intents, and behavioral control, which are considered as separate factors. The dependent variable in this study pertains to compliance behavior. The data collection methods employed in this study were the administration of interviews and the distribution of questionnaires to the participants. Participants will be provided with a questionnaire comprising a series of inquiries accompanied by response choices ranging from strongly disagree to strongly agree. A score of 4 will be assigned to each response indicating strong agreement, a score of 3 will be assigned to responses indicating disagreement, a score of 2 will be assigned to responses indicating slight disagreement, and a score of 1 will be assigned to responses indicating extreme disagreement. Subsequently, the scores will be aggregated and classified into positive or negative, as well as high or low.

The data analysis for this study was conducted with IBM SPSS Statistics Version 22 software. The statistical analysis employed in this study involved univariate analysis, namely descriptive statistical analysis, to examine the distribution of subject characteristics and all research variables. Subsequently, a bivariate analysis was conducted employing the Chi Square test in order to examine the association between each independent variable and the dependent variable. A binary logistic test was conducted to further examine the variables that exerted the greatest influence on compliance behavior.

## RESULT DAN DISCUSSION

**Table 1: Distribution of Respondents Based on Characteristics of Female Students at the Al Ikhlas Ujung Bone Islamic Boarding School**

No	Individual Characteristics	Frequency (f)	Percentage (%)
1	<b>Education</b>		
	Madrasah Tsanawiyah (Junior High School)	73	60,8
	Madrasah Aliyah (Senior High School)	47	39,2
2	<b>Age (Year)</b>		
	12	6	5
	13	36	30
	14	23	19,2
	15	10	8,3
	16	27	22,5
	17	18	15
3	<b>Menarche Age (Year)</b>		
	9	2	1,7
	10	7	5,8
	11	44	36,7
	12	46	38,3
	13	16	13,3
	14	5	4,2
4	<b>Parents' Last Education</b>		
	elementary school	3	2,5
	Junior High School	11	9,2
	Senior High School	44	36,7
5	<b>Economic Status (Rp)</b>		
	<3.384.876	55	45,8
	>3.384.876	65	54,2

Table 1 displays the demographic attributes of participants from the Al Ikhlas Ujung Bone Islamic Boarding School. The data reveals that a significant proportion of respondents were enrolled in MTs (60.8%), while the majority of participants were 13 years old (30%). Furthermore, it was observed that 38% of respondents experienced menarche at the age of 12 years. In terms of parental education, 51.7% of participants had parents with a tertiary level of education. Additionally, the majority of respondents belonged to a high socio-economic stratum, with an income level exceeding 3,384,876 (54.2%).

**Table 2: Compliance with the consumption of blood supplement tablets among female students at the Al Ikhlas Ujung Bone Islamic Boarding School**

No	Variable	Compliance Behavior in Consuming Blood Supplement Tablets				P-value
		Not Obey		Obedient		
		Frequency	Percentage	Frequency	Percentage	
1	<b>Attitude</b>					0,000
	Negative	28	48,3	30	51,7	
	Positive	9	14,5	53	85,5	
2	<b>Subjective Norms</b>					0,000
	High	36	41,9	50	58,1	
	Low	1	2,9	33	97,1	
3	<b>Intention</b>					0,000
	High	36	39,1	56	60,9	
	Low	1	3,6	27	96,4	
4	<b>Behavior Control</b>					0,001
	High	30	42,9	40	57,1	
	Low	7	14,0	43	86,0	

**Table 3: Multivariate Multiple Logistic Regression Analysis**

Variable	B	P-value	OR (CI 95%)
Attitude	0,914	0,070	3,271 (0,926-6,751)
Subjective Norms	2,053	0,066	3,390 (0,876-63,337)
Intention	2,255	0,036	4,387 (1,156-78,561)
Behavior Control	-5,362	0,001	

According to the findings presented in Table 3, the multivariate logistic regression analysis reveals that among the three factors examined, only one variable, namely intention, was found to be significant and hence included in the final model of the multivariate analysis. The variable in question exhibits a statistically significant P value of less than 0.05. Therefore, it can be inferred that these variables exert an influence on and exhibit a correlation with compliant behavior in the use of iron tablets. The variable "intention" exhibits a B coefficient of 2.255, indicating a positive connection. Additionally, it possesses an odds ratio (OR) of 4.387. Based on the findings, it can be inferred that there exists a positive correlation between an individual's level of intention and their compliance in consuming Fe tablets. Specifically, a higher intention is associated with a greater likelihood of obedient behavior in adhering to the recommended Fe tablet regimen. Notably, the risk of obedient behavior in taking Fe tablets is seen to be fourfold.

This study is subject to various limitations, one of which pertains to the utilization of quantitative data collection methods. Consequently, it is unable to delve into comprehensive insights into compliance behavior in the context of blood supplement tablet consumption. Furthermore, the present study employs a cross-sectional design, hence limiting its ability to establish a causal association between variables. This study exclusively focused on students in classes VII, VIII MTs and X, XI MA, whereas classes IX and XII were not included in the research, hence limiting the ability to see variances across all grade levels.

## CONCLUSION

The compliance behavior in ingesting blood supplement tablets as a preventive measure against anemia among female students at the Al-Ikhlâs Ujung Bone Islamic Boarding School is influenced by attitudes, subjective norms, intents, and behavioral control. The variable that exerts the greatest influence on compliance with the consumption of blood supplement tablets among female students is intention. Consequently, healthcare professionals have the capacity to offer counseling services aimed at disseminating knowledge regarding the ramifications of anemia. Counseling sessions are conducted to address adherence to regulations pertaining to the proper administration of blood supplement pills. Additionally, these sessions offer further health information to female students, specifically focusing on the adverse effects associated with the use of Blood Addition pills.

In order to comprehensively investigate the effects of blood supplement tablets on female students, teachers, and program implementers, future researchers are advised to employ a mixed methods research approach. This approach should involve conducting Focus Group Discussions with the aforementioned individuals, as well as objectively measuring hemoglobin (Hb) levels. By employing this methodological framework, researchers will be able to assess the potential influence of blood supplement tablet consumption on the target population. In addition to the aforementioned, this intervention can be implemented among different cohorts of adolescents, specifically those who have completed their formal education and those residing in geographically remote regions with limited access to healthcare services.

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