HEALTH EXTENSION ON PREVENTION OF ANEMIA FOR FEMALE CADRES IN KRENDANG VILLAGE, WEST JAKARTA

Alvina[1*], Pusparini[2], Lie T Merijanti[3]

[1-3]Faculty of Medicine, Universitas Trisakti

Email Korespondensi: dr.alvina@trisakti.ac.id

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ABSTRACT

Anemia is one of the conditions that may result in decreased work productivity and low academic achievement, because a person with anemia becomes weak, exhausted, fatigued, and limp, all of which may disturb the person's concentration in working and learning. There are several factors that can cause anemia, one of which is poor knowledge about the prevention of anemia. Female cadres are expected to assist the government in disseminating the knowledge required in the prevention of anemia. The purpose of this Community Service (*Pengabdian Kepada Masyarakat*, PKM) is to provide education through health extension on the prevention of anemia to the female cadres of Krendang village (*kelurahan*), West Jakarta. During the Community Service tests are given before and after the health extension to determine the understanding of the participants about the presented matter. The test results showed an increased understanding after the health extension. Education through health extension was able to increase the understanding and knowledge of the female cadres. Further education of the female cadres is needed such that they become able to disseminate the prevention of anemia to the community.

Keywords: Knowledge, Anemia, Female Cadres

1. INTRODUCTION

Anemia is a condition in which the hemoglobin concentration is below the normal values. The function of hemoglobin is to transport oxygen throughout the body. A reduction in hemoglobin concentration results in a reduced oxygen supply throughout the body, which may produce symptoms, such as being frail, fatigued, limp, lethargic, and weak. (Putri AA, et al. 2021) Based on data from the WHO for 2021, the prevalence of anemia was 29.9% in women of reproductive age in the age range of 15-49 years. Data from Riskesdas for 2018 state that the prevalence of anemia in adolescent girls aged 15-24 years was 32%, in men 20.3% and in women 27.2%. (Putri AA, et al. 2021; WHO. 2021; Badan penelitian pengembangan. 2018) The prevalence of anemia in pregnant women was 43.9% globally and 49.4% in Asia. (Wulandari A, et al. 2023) Adolescent girls and pregnant women are the groups that are vulnerable to anemia.

The high prevalence of anemia in pregnant women is a problem for the Indonesian government because anemia occurring in pregnancy is associated with mortality and morbidity in mothers and their infants, such as risk of abortion, low birthweight infants, and hemorrhage. (Wulandari A, et al.

2023; Roosleyn IPT. 2016; Tanziha I, et al. 2016) Anemia in adolescent girls may result in reduced reproductive health, lowered motor and mental development, decreased academic achievement, and the occurrence of intellectual retardation. Adolescent girls are at risk of anemia because they menstruate. (Putri AA, et al. 2021; Harahap. 2018)

The most frequent cause of anemia in adolescent girls and pregnant women is iron deficiency anemia. Poor knowledge in adolescent girls and pregnant women results in the occurrence of anemia. Knowledge may influence the thought pattern of adolescent girls in their attitude. Knowledge in pregnant women also affects the habitual pattern of daily meals in pregnancy. (Putri AA, et al. 2021; Wulandari A, et al. 2023)

Anemia is one of the national problems because it immensely influences the quality of human resources and indicates the socioeconomic welfare of the community. (Wulandari A, et al. 2023; Sjahriani T, et al. 2019)

Education is one of the conditions that can be instituted to prevent the occurrence of anemia, because poor knowledge may be the cause of anemia. The community should be able to play a role in the attempt to prevent the occurrence of anemia. The female cadres are units of the community that may play a role in assisting the government, especially at village (*kelurahan*) level. Krendang village that was chosen as the venue for conducting the Community Service is one of the villages under the auspices of the Faculty of Medicine, Universitas Trisakti, in the framework of the Three Pillars of Higher Education (*Tridarma Perguruan Tinggi*).

The education given in the Community Service aims at increasing the knowledge of the female cadres about the prevention of anemia, such that the female cadres may share their knowledge with the community in their neighborhood.

2. PROBLEMS AND FORMULATION OF QUESTIONS

The prevalence of anemia in Indonesia is rather high. A low level of knowledge may be one of the causative factors for the occurrence of anemia. It is imperative to provide education to increase knowledge about the prevention of anemia through health extension. The education is given to the female cadres at village level because these village cadres are an extension of the arm of the government in giving community mentorship.

The formulation of the question is: how high is the level of knowledge of the female cadres about the methods of prevention of anemia?

Figure 1. Venue of Community Service in Krendang Village, West Jakarta

3. LITERATURE REVIEW

Anemia is a condition in which the hemoglobin concentration (Hb) is below normal, such that it is insufficient to meet the physiological needs of an individual. The causes of anemia are diverse and complex, therefore they should be correctly understood such that the anemia can be prevented and overcome in accordance with their causes. (Chaparro C, et al. 2019) The causes of anemia are among others deficiencies of iron, folic acid, and vitamin B12, inflammation, parasitic infections, and hereditary factors. (Permata II, et al. 2023)

Anemia affects one-third of the global population and contributes to increased morbidity and mortality, lowered work productivity, and impaired neurological development. (Chaparro C, et al. 2019) Anemia in children and women constitutes a persistent global public health problem that will have a negative impact on the quality of human resources in the future. The prevalence of anemia in Indonesia is higher than in neighboring countries in the Southeast Asian region. (Wirawan F, et al. 2022)

Iron deficiency anemia is the most frequently occurring anemia in children and women that is caused by lack of iron and is estimated to affect 63% of adolescent girls in Indonesia. (Wirawan F, et al. 2022) Iron deficiency anemia in Indonesia is the most significant factor contributing to a low level of public health. A total of 28.1% of the underfives, 29% of children aged 5-12 years, 37.1% of pregnant women, 22.7% of adolescent girls aged 13-18 years, and women of reproductive age are impacted by iron deficiency anemia. Malnutrition and helminth infection in Indonesia are also frequently associated with the occurrence of anemia. (Van Zutphen KS, et al. 2021)

The prevention of anemia is one of the priority programs of the Indonesian Ministry of Health in order to improve the health of mothers and their children. Community involvement, in this case the role of health cadres, is crucial for the success of the program. (Narumi S. 2023) The study of Sikome that was cited by Narumi et al. (Narumi S. 2023) showed that community participation plays a role in the success of the program and that healthcare programs are hindered by low community participation. The study of Saraswati as cited by Narumi (Narumi S. 2023) also states that community participation plays an important role in intensifying the Healthy Living Community Movement (*Gerakan Masyarakat Hidup Sehat, GERMAS*), because community participation is affected by knowledge level, time, and social environment.

Knowledge is important in changing health-related behavior. Health education is an activity for improving community behavior. The community may be conscious of and knowledgeable about the methods of maintaining health and preventing detrimental conditions. The learning process in health education is the occurrence of changes in the ability of the learners, with the expected outcome being changes in ability as a result of changes in behavior. (Yunadi FD, et al. 2020) The factors affecting knowledge are internal factors (education, occupation, and age) and external factors (environment, information, socio-cultural). A higher level of education in a person may facilitate reception of information, a person's age increases his or her maturity and strength in thinking, while the socio-cultural system of the community may influence a person's attitude in accepting information. (Sari LT, et al. 2022)

Health education may be given to health cadres, because of their role in sharing their knowledge with the community. (Yunadi FD, et al. 2020; Sari

LT, et al. 2022) Cadres are the vanguard and spearhead of health motivators in the community that participate in improving community health, because they are select persons in the community and are trained to move the community to participate in empowering the community in the healthcare field. Increasing the knowledge of health cadres is expected to be able to lower the prevalence of anemia. (Sari LT, et al. 2022; Diana S. 2023)

4. METHODS

The Community Service activity in female cadres is a form of public health service that is conducted by means of health extension through lectures and Questions and Answers. This activity was conducted in the Child-friendly Integrated Public Space (RPTRA) of Krendang Village, Tambora, West Jakarta and was held on June 6, 2024 9.00 AM local time until completion. The targets of the activity were the female cadres of Krendang Village, West Jakarta totaling 30 people.

The activity commenced with a preparatory phase, comprising:
1) Contacting the Krendang Village authorities to inform them that a health extension session on anemia would be held for female cadres.
2) Decide on the venue and time of the health extension session.
3) Preparing the pre- and post-test questions for female cadres.
4) Preparing the health extension topic material.

Course of the health extension session:
1) Preparing snacks and drinks for the audience.
2) Documenting the attendance of the female cadres, which was assisted by educational staff of the Faculty of Medicine, Universitas Trisakti.
3) Opening of the health extension session was initiated with speeches by the Krendang Village authorities and the Dean of the Faculty of Medicine, Universitas Trisakti, followed by a 10-minute pre-test for the female cadres.
4) The pre-test was succeeded by the subject matter of the health extension.
5) The health extension was followed up with a discussion session and Questions and Answers.
6) The activity was closed by the participation of the female cadres in the post-test.

5. RESULTS AND DISCUSSION

a. Results of the study

Table 1. Characteristics of female cadres of Krendang Village

Variable	n (%)
Age (years) mean ± SD	52 ± 9.43
Occupation	
Housewife	32 (97)
Teacher	1 (3)
Education	

Elementary school	5 (15.2)
Junior High School	10 (30.3)
Senior High School	16 (48.5)
Tertiary education	2 (6.1)
Pre-test score (mean ± SD)	78.5 ± 13.6
Post-test score (mean ± SD)	91.9 ± 9.48

Table 2. Correlation of age and educational level with pre- and post-test scores

Variable	Pre-test score		Post-test score	
	p	r	p	r
Age *	0.946	0.012	0.002	0.530
Education#	0.431	0.142	0.000	0.586

P <0.05 significant difference *Pearson test # Spearman test

Table 3. Results of paired t-test

Variable	Mean (SD)	p value
Pre-test score	78.5 (13.6)	0.000
Post-test score	91.9 (9.48)	

Table 1 shows the characteristics of the female cadres as Community Service participants. Mean age of the participants was 52 ± 9.43 years, with the majority being employed as housewives, and the most frequent level of education being senior high school. There was on average an increase in the scores from pre-test to post-test.

Table 2 shows that there was a significant correlation of age and educational level with post-test score. There was a positive correlation between age and post-test score, signifying that the older the participant the higher the post-test score. Similarly between level of education and post-test score there was also a positive correlation, signifying that the higher the educational level the higher the post-test score.

In Table 3 the paired t-test shows a significant difference between pre- and post-test scores.

b. Discussion

The topic of the health extension was to inform the female cadres on the prevention of anemia. The role of the cadres is to transfer the received knowledge to the community, such as adolescent girls and pregnant women in their residential neighborhood. This topic was chosen because not all cadres know about the prevention of anemia, while they are the vanguard of the health movement in the community. (Yunadi FD, et al. 2020; Diana S. 2023) The number of participating female cadres who attended the meeting was 33 persons. The majority of the female cadres was housewife, with a mean age of 52 ± 9 years. Housewives have a dual role, namely two roles that they play at the same time. In this case the housewife may play the role of spouse to the husband and mother to the children and also play the role of a women with a task or career

outside the home. (Tumbage S, et al. 2017) Housewives aged 50-60 years can probably function more outside the home as cadres, because their children are already independent and the household tasks are diminishing, such that the housewife can actively work outside the home as cadre. Cadres are persons that were chosen by the community and were then trained to motivate the community to participate in the healthcare field. (Diana S. 2023) The study of Wuwuh as cited by Narumi demonstrated that pregnant women who are accompanied by cadres are more compliant in consuming iron tablets. This shows that cadres play a role in supporting the anemia prevention program in pregnant women. (Narumi S. 2023) Cadres are also the key to success for the program to improve the healthcare skills and knowledge in the community. The presence of community cadres in the prevention of anemia becomes of strategic importance because they may play the role of health promoter, assist in the early detection of anemia, function in patient referral, supervise the consumption of blood supplements, and monitor the dietary needs of pregnant women. (Haninggar RD, et al. 2024)

In the present Community Service, an increase was found in the post-test scores as compared to the obtained pre-test scores, such that there were significant differences between pre- and post-test scores. This shows that the given health extension had an influence on the knowledge of the cadres. The goal of the pre-test was to determine the extent of the knowledge of the female cadres about the prevention of anemia, whereas the goal of the post-test was to evaluate the changes in knowledge after the health extension.

These results are similar to the Community Service results obtained by Diana S (Diana S. 2023) where there was an increase in the number of cadres having good knowledge based on the post-test results after receiving training. This is similar to the study results of Solehati et al. who stated that there was increased knowledge after the post-test, such that health education affects the knowledge level of the health cadres. (Solehati T, et al. 2018) This is also in line with the training by Haninggar et al. (Haninggar RD, et al.2024) who found an increase in the post-test scores of cadres in Mamuju District. An increased post-test score is one of the indicators of the success of a health extension session and the training given during the activity. This shows that training or extension are necessary for the cadres to update their knowledge. The increased knowledge of female cadres after health extension is expected to assist in increasing the role of these cadres. The study conducted by Fitriana as cited by Diana S states that the increased knowledge of the cadres may lower the incidence of anemia in pregnant women. (Diana S.2023) The information obtained by an individual may influence their knowledge, because knowledge is the result of acquisition of information. (Marreta MY, et al. 2022)

One of the factors affecting the role of cadres is their knowledge. The better the knowledge of the cadres about healthcare programs, the more capable will they be to motivate the community to conduct health programs. (Narumi S. 2023) The increased knowledge of the cadres after receiving health extension, may also be influenced by several factors, such as the cadres having sufficient previous knowledge about anemia, because anemia is a frequent disorder in the community. The knowledge that the cadres have ever stored in their memory, will then emerge again

with the more recent health extension. Health extension that is attractive and easy to understand will increase the knowledge of the cadres and will have a positive response. Good health behavior is also influenced by good knowledge. (Yunadi FD, et al. 2020)

The cadres need the most recent knowledge, because the feature of knowledge is that it is always developing. Because the cadres are extensions of health personnel, these cadres also play a role in the health of their neighborhood. The increased knowledge of the cadres may assist them to share their knowledge with the regional community. (Solehati T, et al.2018) The study of Miskin as cited by Solehati (Solehati T, et al. 2018) showed that the role of the cadres influences the knowledge of pregnant women.

The fact that there was a significant positive correlation between age and post-test score, signifies that the older a person, the higher the post-test score. A person of older age finds it easier to digest and understand the imparted knowledge. The older a person is, the wiser that person and the more information and knowledge obtained. Age also affects a person's thought pattern and ability to comprehend. The older a person the more developed that person's comprehension and thought pattern, such as to improve the obtained knowledge. (Sulistyowati A, et al. 2017)

According to Wawan et al., as cited by Sari et al., (Sari LT, et al.2022) there are factors that affect knowledge, namely internal factors, such as age, education, and employment, and external factors, comprising environmental, informational, and socio-cultural factors. The more advanced a person's age, the more mature the person's thought processes, whereas environmental and socio-cultural factors influence a person's attitude and behavior in receiving information.

There was a significant positive correlation between education and post-test score. This shows that the higher the level of education, the higher the post-test score. A high level of education makes a person easy to understand the imparted knowledge, because the level of education strongly affects a person's ability to receive information. The higher a person's level of education, the easier it is for that person to receive information. (Yunadi FD, et al. 2020)

Figure 2. Atmosphere during the course of the health extension

Figure 3. Atmosphere during the Discussion and Questions and Answers

Figure 4. Atmosphere during the post-test

6. CONCLUSION

The present Community Service activity may be seen as an endeavor to improve the knowledge of the female cadres in preventing the occurrence of anemia, such that it may bring a positive impact by increasing the role of the cadres in the community. The cadres, who play the role of the vanguard of community health, need to achieve an improvement in their knowledge of the topic, such that the health-related activities in their community may proceed optimally.

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