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## READINESS OF THE COMMUNITY-BASED ORGANIZATION IN IMPROVING FEMALE ADOLESCENTS' IRON FOLATE STATUS IN A RURAL AREA

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### ABSTRACT

The iron deficiency anemia status of female adolescents needs attention because of its increasing prevalence and impact on adolescent health today and in the future, as well as the country's socio-economic status. Efforts to reduce cases of anemia in female adolescents need to involve multisectoral organizations, including community-based organizations (CBO). Karang-taruna and Posyandu cadres, as CBOs form in rural areas, have the potential to be involved in collaborative programs to improve the anemia status of female adolescents in rural areas. This study aims to identify CBO's readiness to prevent and control anemia in adolescent girls in Sirnagalih village, Bogor, West Java. This study uses a cross-sectional design with a mixed-method approach. The subjects of this study consisted of key resource persons consisting of a village head, three village officers, a head of Karang-taruna, a health-center staff, 6 Karang-taruna members, and 10 Posyandu cadres. The selection of these subjects is based on their role in the village as key persons who willingly participate. The results showed that most CBO members had less knowledge of female adolescents' anemia prevention programs (43.75%). But have a good attitude (56.25%) and self-efficacy (68.75%). The readiness of CBO at Sirnagalih village was at the first level, meaning that CBO members are not aware of the problem of anemia in young women in rural areas. It is necessary to make intervention efforts to increase the readiness of CBOs before further collaborative efforts are carried out.

**Keywords:** Anaemia; Community-based organization; Female adolescent; Readiness; WIFAS

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### INTRODUCTION

The biggest contributor to micronutrient problems worldwide, particularly in developing countries, is anemia, mainly due to iron-folate deficiency. The prevalence of anemia occurs in all age groups, but women of childbearing age, including adolescent girls, are the highest group of people with anemia.<sup>1</sup>

Women of childbearing age and adolescent girls who suffer from anemia can develop anemia during pregnancy and are at risk for bleeding or giving birth to babies with low birth weight.<sup>2</sup> Therefore, anemia in adolescent girls and women of childbearing age must be prevented, one of which is the

iron-folate supplementation program. In accordance with the World Health Organization program (2011), the Indonesian Ministry of Health launched a weekly iron folate supplementation program for female adolescents and women of childbearing age in 2014.<sup>3</sup>

In developing countries, a school-based weekly iron and folic acid supplementation (WIFAS) program for female adolescents is a key intervention to prevent anemia and improve folic acid status. This strategy is universally applicable to reduce the risk of "forgetting to take iron".<sup>4</sup> School readiness in implementing the school-based Wifas program is necessary for the effectiveness of

the anemia prevention and control program in adolescent girls.<sup>5,6</sup>

Unfortunately, the WIFAS program has been hampered since the COVID-19 pandemic hit, when schools were closed and students were studying from home. Schools cannot hold IFAS drinking together, motivate and monitor student compliance to consuming IFAS. However, some regions have adapted by collaborating with adolescent Posyandu cadres to make home visits once a week to distribute IFAS. Along with the rapid use of the internet, efforts have been made to optimize the use of social media and the WhatsApp application as a communication channel between health workers, cadres, and the wider Community.<sup>7</sup>

Not all regions have a Primary Health Care/Puskesmas or Posyandu, particularly for adolescents who the local health office fosters. Therefore, it is necessary to make a breakthrough by cooperating with Community-Based Organizations (CBO) that already exist in the Community so that the WIFAS program can continue to run during the pandemic.<sup>8</sup>

Based on the 2018 Riskesdas data, the prevalence of anemia in young women in rural areas is higher than in urban areas, which is 25%. Therefore, it is necessary to do more intensive prevention and control of anemia in young women in rural areas.<sup>9</sup>

Several CBOs in the village has the potential to be involved in health programs, including youth organizations and Posyandu. Collaboration with the CBO can increase the active participation of the community so that it can increase the potential for program sustainability and produce significant changes. Before collaborating with CBOs, it is necessary to analyze the readiness of CBOs. Plested et al. (2006) describe community readiness as a level where a community is willing and ready to act on a problem.<sup>10</sup> The development of this model of community preparedness arose from the need to understand better the awareness of individual community members of a problem and its relation to prevention programs. The developer of this model defines community

readiness as "the relative acceptance of a program, action, or another form of local-based decision-making activity."<sup>11</sup>

Studies examining the readiness of CBO in anemia prevention and control programs in adolescent girls are still lacking because previous studies did not analyze the context, such as situation conditions, expectations, abilities, capacities, and readiness of the subject or actor who implements the intervention. The discussion carried out is often only emphasized in the form of intervention alone. Thus far, nutrition programs in Indonesia are more of a "program in" than a "program for" or a "joint program" for the Community.<sup>12</sup> One of the causes of the ineffectiveness of intervention not only depends on the form of the intervention but also on the context in which and who the target is and what support systems are available in a community.<sup>13</sup> Therefore, this study aims to identify CBO's readiness to prevent and control anemia in adolescent girls in Sirnagalih village, Bogor, West Java. A previous study in Sirnagalih showed that the iron folate supplementation program had not been implemented there, and many young women did not know about the problem of anemia in adolescent girls and the benefits of iron folate supplementation.<sup>14</sup> This CBO readiness analysis can be used to map the intervention and collaboration efforts that will be carried out later.

## **MATERIAL AND METHODS**

### **Research design, sample, location, and time.**

The study design is a survey study with a cross-sectional design using semi-quantitative and qualitative approaches. The research unit is CBO selected by using the purposive sampling technique. The sample selected as respondents met the inclusion and exclusion criteria. The inclusion criteria for the sample are respondents are key informants. Key resource persons comprised a village head, 3 village officers, a chairperson, 6 Karangtaruna (Katar) members, 10 Posyandu cadres, and a nutrition manager at the Balekambang Public Health Center who supervised

community health in Sirnagalih village, Bogor, West Java. These subjects are selected based on their role in the village as key persons and willing to participate in this study. This research was conducted in Sirnagalih village, Jonggol district, Bogor district, West Java province, in January 2022.

### **Research variable**

The research variables consisted of Social Demographic Characteristics of CBO members (gender, age, education level, occupation, marital status, type of CBO followed, length of work, and motivation to become a CBO administrator/member). This study also measures the level of knowledge, attitudes, and self-efficacy of the program as well as the level of readiness of the management and CBO members in the program.

The knowledge variable was measured by questions related to the definition of anemia, symptoms of anemia, the main causes of anemia, how to prevent anemia, the definition of iron folate tablets and their contents foods types that can reduce Hb levels in the blood, side effects of iron folate tablets, foods that are sources of iron. The attitude variable was measured on a Likert scale which measured the respondent's attitude towards 7 statement items consisting of; 1) taking iron tablets improves learning achievement, 2) if you suffer from anemia, you will feel tired/tired easily, 3) an increased risk of developing anemia during menstruation, 4) taking iron folate tablets once a week can prevent anemia, 5) needing iron tablets to meet the needs nutrition, 6) increased risk of developing anemia if suffering from malaria/worms, and 7) habit of avoiding drinking coffee/tea while eating. The Efficacy variable was measured by 4 statement items consisting of 1)Katar and cadres can motivate young women to consume foods that are a source of iron and nutritionally balanced; 2)Katar and cadres can educate young women about anemia prevention and control; 3)Katar and cadres can organize female adolescents to take WIFAS together; 4)Katar and cadres can

monitor the compliance of young women drinking IFAS.

### **Types and methods of data collection**

The data collected in this study consisted of 2 types: quantitative and qualitative data. Quantitative data, namely socio-demographic data, level of knowledge, attitudes, self-efficacy, and readiness of CBO members, were collected by conducting face-to-face interviews and inputted into the google form template. Qualitative data such as supporting data were obtained by conducting interviews and integrated group discussions using an interview guide to the village head, head of Katar, and nutrition management staff at Balekambang Health Center.

The measurement of the level of community readiness was carried out by interviewing key informants using a community readiness instrument which was adapted and modified from the community readiness model instrument developed by researchers at the Tri-ethnic Center for prevention research in 1995 and the school readiness instrument in the school-based WIFAS program developed by Apriningsih et al.2020.<sup>15</sup> Community readiness was measured using five dimensions of readiness, namely: the CBO effort dimension consisting of 3 question items, the leadership dimension consisting of 7 question items, the resource dimension consisting of 2 question items, the CBO understanding awareness dimension related to anemia consisting of 5 question items, and the dimension of community climate which consists of 2 question items. The measurement of the score of each question item was carried out by a research team consisting of 3 primary researchers.

### **Processing and analysis of data**

Qualitative data obtained from in-depth interviews and integrated group discussions were processed using qualitative data processing principles. Qualitative data analysis consists of preparing and organizing data for analysis. Furthermore, the data is reduced into themes through coding and condensing the codes, which are then presented according to the rules of qualitative

research in the form of quotations and presentation of secondary data.

The collected quantitative data was edited, coded, inputted, and analyzed using IBM SPSS software version 23. Data on socio-demographic characteristics, level of knowledge, attitudes, and self-efficacy were analyzed descriptively and presented in a table by the frequency, number, and percentage. Readiness data was analyzed by adding the scores for each question item in each readiness dimension and then calculating the average score of all dimensions of readiness. Level of CBO readiness categorized according to community readiness model previously used to assess community readiness for change.<sup>16</sup>

### Research ethics

This research has received ethical approval from the Health Research Ethics Committee, Universitas Pembangunan Nasional Veteran Jakarta Number. 499/XII/2021/KEPK.

### RESULT

Community-based organizations in rural areas, such as youth organizations and community health center cadres, have the potential to be involved in development activities, including prevention and control programs for iron deficiency anemia in adolescent girls.<sup>16</sup> The same thing was conveyed from interviews with the village head, the nutrition management staff of the Balekambang Health Center who developed the Sirnagalih village, and the head of the Sirnagalih village youth organization below.

"As for the health problems of female adolescents, in our village in Desa Sirnagalih, it tends to be rare. If it's the health problems of female adolescents, it's the most basic things. The usual diseases are fever and typhoid fever. As mentioned earlier, anemia in adolescent girls may be present but not detected yet" (head of Sirnagalih village, Bogor)

"Usually, the target schools carry out an iron folate supplementation program for young girls. Since the pandemic, everything

has been hampered, all health programs, including PMT-AS (pemberian makanan tambahan anak sekolah), give iron folate to young women and pregnant women. If you want to involve youth organizations and posyandu cadres, that's great. Because if I have to go down to the village myself, I can't afford it." (Nutrition staff at Balekambang Health Center, Bogor).

"So far, no youth organization has been involved in special health programs, most often Posyandu cadres. If we want to be involved now, we are very happy to be able to participate. Even though we still have to be accompanied by Posyandu cadres, Puskesmas, or health workers. Because many of the administrators and members of Katar work outside the village on weekdays and can only be active on weekends in the village" (Chairman of Katar in Sirnagalih Village, Bogor)

Efforts to involve members and or administrators of youth organizations and Posyandu cadres in the program to improve the anemia status of adolescent girls are increasingly needed during the COVID-19 pandemic. When the school-based program of giving iron and folate to young girls cannot be implemented due to the implementation of distance learning. So that the school, especially the teacher in charge of the school-based health post-program, cannot hold an event to drink iron folate together, monitor and document the compliance of students taking iron folate at school.<sup>7</sup>

"Teenagers are often disobedient in taking iron folate supplements, so they need to be supervised if there are teachers at school and there is a compliance report sheet. If it's in the village, it's also good if someone can monitor the drinking of the iron and use the monitoring sheet too" (Nutrition staff at Balekambang Health Center, Bogor)

The Community based organization (CBO), consisting of youth organizations (Karang-taruna or Katar in Bahasa) and posyandu cadres involved in this study, has the characteristics described in table 1. The majority of respondents are female, married, have a junior high school education, with a

balanced proportion of age between the age groups 20-29 and 50- 59 years old, and act as a social group administrators in Sirnagalih village, Jonggol, West Java. The length of time they take part in katar and cadres, half of them say it's less than two years, the other half say it's more than two years.

Karang-taruna members and posyandu cadres have a balanced motivation to become CBO members between their desires and being invited by village officials. In this case, most of them claim to be invited by Bu Lurah. Bu Lurah also chose them because she saw the people who were invited to be active in the Community. The following is a statement from one respondent about the reasons for being a board member and a member of the CBO:

"The village head invited me because I was already active in religious activities, so I often met a lot of people ... so I was elected." ("A" a Posyandu Cadre)

"My own desire because I like to organize and socialize, meet many people. ("S" a Karang taruna member).

Table 2 describes the level of knowledge, attitudes, and self-efficacy of Karang-taruna members towards the anemia prevention program and iron-folate supplementation in young women in Sirnagalih village, Bogor, West Java. Most (43.75%) respondents have less knowledge about anemia and giving iron tablets to young girls. Most respondents have good attitudes and self-efficacy towards efforts involving Katar and cadres in preventing and controlling anemia in adolescent girls in the village.<sup>14</sup> The support provided by both the health office/Puskesmas and the village office was assessed by the respondents as balanced, 50% considered it adequate, and the other 50% considered it inadequate.

**Table 1.** Socio-Demographic Characteristics of Community Based Organization (CBO) members of Sirnagalih Village

Socio-Demographic Characteristics	Frequency	%
Gender		
- Male	3	25.0
- Female	13	75.0
Age		
- <20	2	16.7
- 20-29	3	25.0
- 30-39	2	16.7
- 40-49	2	16,7
- 50-59	3	25.0
Education Level		
- Primary School	3	19.0
- Junior High School	6	38.0
- Senior High School	6	38.0
- University	1	6.0
Marriage Statue		
- Unmarried	5	31.0
- Married	11	69.0
Occupational statue		
- Unemployment	9	56.3
- Employment	7	43.7
CBO type involved		
- Health Community Post	10	62.5
- Youth group	6	37.5
Length of experience working in CBO		
- < 2 years	8	50.0
- ≥ 2 years	8	50.0
Motivation to be actively involved in Community based organization:		
- Self-willed because he/she likes to organize	8	50.0
- Invited by village officials	8	50.0

**Tabel 2.** Knowledge, Attitude and Self Efficacy CBO members towards Female Adolescents'Anemia Prevention program at Sirnagalih village, Bogor

<b>Knowledge, Attitude, and Self Efficacy CBO members toward Female Adolescents'Anemia Prevention program</b>	<b>F</b>	<b>%</b>
Knowledge of CBO members towards Female Adolescents'Anemia Prevention program		
- Good (>80)	5	31.25
- Enough (60-79)	4	0.25
- Less adequate (<60)	7	43.75
The attitude of CBO members towards Female Adolescents'Anemia Prevention program		
- Positive	9	56.25
- Negative	7	43.75
Self Efficacy CBO members towards Female Adolescents'Anemia Prevention program		
- High Self Efficacy	11	68.75
- Low Self Efficacy	5	31.25
Support from Village Officials and Health Authority		
- Adequate	8	50.00
- Less Adequate	8	50.00

CBO readiness level is assessed based on Community Readiness Model (CRM) theory. CRM theory consists of nine levels of readiness to accept and run programs in their environment. These levels include indifference, resistance, ambiguity awareness, pre-planning, preparation, initialization, stabilization, affirmation or extension, and professionalization. Community readiness represents the ecological context and organizational systems involved in change efforts. The CBO readiness score was based on the consensus of the three scorers and each interview response was classified according to the dimensions of community readiness. Independent scores were combined for each dimension, and overall community readiness scores were then calculated using the 5-

dimensional mean score in Ms. Excel 2010. The community readiness score was assessed as a continuous variable. Respectively, the mean scores were rounded down to categorize the overall and dimension-specific community readiness scores into several levels. For example, a community with a sustainability readiness score of 1.4 is categorized at Stage 1.<sup>16,18,19</sup>

As shown in Table 3, the readiness of CBOs to improve the iron nutritional anemia status of adolescent girls in Sirnagalih village is in the first level. At the first level of readiness, the Community, in this case, the CBO, which consists of cadres and Karangtaruna, does not recognize the issue of anemia in adolescent girls and iron-folate supplementation as problems that arise and must be addressed in Sirnagalih village. This is reinforced by the results of interviews with village heads, youth organizations, and posyandu cadres. All the key informants stated that so far, the health problems in adolescents have arisen are only diseases such as dizziness, fever, and typhoid. So far, the iron-folate supplementation program has focused only on pregnant women, never young women.

**Table 3.** Readiness Stage of CBO in Female Adolescents'Anemia Prevention program at Sirnagalih village, Bogor Jawa Barat

<b>Dimension of Readiness</b>	<b>Stage</b>
CBO Effort	1.2
Leadership	1.5
Resources	1.3
Awareness of CBO towards Female Adolescents'Anemia	1.4
Community climate	1.4
Mean of CBO readiness stage towards female adolescents'anemia program	1.4

## DISCUSSION

WHO launched efforts to improve the nutritional status of iron folate in adolescent girls through the school-based WIFAS program have been launched by WHO since 2011 to reduce the prevalence of anemia in adolescent girls.<sup>17</sup> The WIFAS program is one of the specific programs to reduce stunting

cases.<sup>18</sup> since the pandemic, the school-based WIFAS program has been hampered. Therefore, it is necessary to innovate new breakthroughs so that the program can run well.

Based on 2018 Riskesdas data, the prevalence of anemia in adolescent girls is 25% greater in rural areas than in urban areas.<sup>9</sup> Sirnagalih Jonggol Village, Bogor, one of the villages in the province of West Java. The IFAS acquisition rate for adolescent girls in the province of West Java is only 16.4%, still below the national figure (22.9%).<sup>9</sup> This is still far from the Ministry of Health RI target, which targets as many as 30% of young women to get IFAS.<sup>(22)</sup> Therefore, collaborative efforts with CBOs in rural areas can be a breakthrough for alternative school-based WIFAS programs and could be the one effort to achieve those targets.

Information from the head of the youth organization and nutrition management staff of the Balekambang Public Health Center, thus far, no effort has been made to involve youth organizations to collaborate in health programs, including the WIFAS program. However, they agree and welcome this innovation. Many members of the Sirnagalih Village's Karang-taruna work in cities outside the Sirnagalih Village, such as Jakarta, Bandung, and its surroundings. This causes Katar members to be unable to carry out the planned program optimally. Therefore, it is necessary to involve posyandu cadres who can act as partners of educators and motivators for young women together with Katar. These two social groups are classified as CBO types because they have a formal organizational structure under the village office.<sup>16</sup> This CBO involvement effort is in accordance with the statement of Malhotra et al. (2015) and Roche et al. (2018), which state that community involvement efforts are a form of multisectoral collaboration so that the program to reduce anemia cases in adolescent girls is successful and in line with the socio-ecological model.<sup>20,21</sup>

Because CBO members have never been involved in an anemia prevention program, it is not surprising that CBO members have less

knowledge about anemia. This is in accordance with the studies conducted by Puspikawati and Megatsari (2018) and Simanungkalit and Wahyuningtyas (2020), which stated that the level of knowledge of youth members and cadres about reproductive health, including anemia in adolescent girls, was still low.<sup>22,23</sup>

Although knowledge is still low, most CBO members have positive attitudes and self-efficacy toward CBO collaboration efforts in the anemia prevention program in adolescent girls. Although knowledge is still low, most CBO members have positive attitudes and self-efficacy toward CBO collaboration efforts in the anemia prevention program in adolescent girls. This is the basic capital and potential that must be developed for collaborative efforts in the anemia prevention program for adolescent girls in rural areas. This effort is in line with previous studies in areas such as Banyuwangi east Java, Bantul Yogyakarta, and others.<sup>22</sup>

Readiness is the degree to which a community is prepared to take action on an issue.<sup>24</sup> By assessing the level of Community based organization (CBO) readiness, prevention efforts can align with the community's ability and capacity to change and, therefore, become more effective and sustainable.<sup>10</sup> The readiness of the Sirnagalih Village CBO members is at the first level, which means that there is no awareness from the Sirnagalih Village CBO and stakeholders about the problem of anemia in adolescent girls and the need for a WIFAS program in the village.

Dimensions of CBO efforts in the prevention and control of anemia in adolescent girls are in the first level. This reflects that so far in Sirnagalih village, there have been no efforts involving CBOs in preventing and controlling anemia in adolescent girls.<sup>24</sup> This is reinforced by statements from village heads, youth leaders, and members of Posyandu cadres obtained from interviews and focus group discussions.

The leadership dimensions assessed using 8 question items reflect the level of support from the appointed leadership for the

anemia prevention and control program for young women in Sirnagalih village.<sup>25</sup>

The assessment results of the leadership dimension in this study have the largest score even though they are still in the first readiness stage. The readiness score of this readiness dimension is reflected in the willingness of the village head, the leader of family welfare development (PKK), the head of the youth organization, and the nutrition staff of the Balekambang Public Health Center. The assessment results of the leadership dimension in this study have the largest score even though they are still in the first readiness stage. The readiness score of this readiness dimension is reflected in the willingness of the village head, the leader of the family welfare development (PKK), the head of the youth organization, and the nutrition staff of the Balekambang Health Center. Kostadinov (2016), in his study, wrote that leadership can have an impact on every intervention effort that will be carried out in a community. Community leaders, both formal and informal, can help facilitate program implementation. A highly mobilized community with full leadership support can respond to interventions better than communities with few resources and where leadership does not consider the problem a priority. Involving local leaders in program planning and implementation is a basic principle of health promotion as it encourages local program ownership.<sup>26</sup>

The resource dimension has the second smallest score after the effort dimension (1.3). The dimensions of resources in rural CBOs reflect the readiness of human resources, time, funds, and infrastructure for implementing anemia prevention and control programs in adolescent girls. This is in line with the Apriningsih et al. (2020) study, which found the resource dimension with the lowest score in institutional readiness to run the WIFAS program.<sup>5</sup> This is because the institution/organization does not yet have educational media, special staff, and a special budget for implementing the WIFAS program.

Adequate attitudes and self-efficacy of Katar and Posyandu members to collaborate in anemia prevention and control programs in adolescent girls indicate a potential that needs to be supported by the knowledge level and readiness of CBOs. Therefore, it is highly recommended that before undertaking collaborative efforts, it is necessary to provide training to enhance their knowledge and capacity and provide resource support to CBOs in the village.

## CONCLUSION

The readiness level of Community based organization in Sirnagalih Village is at the first level. However, Sirnagalih Village CBO has the potential to be involved in collaborative efforts with the health sector and academia. This can be seen from the majority of CBO members who have a positive attitude and adequate efficacy to collaborate to prevent and overcome anemia in adolescent girls. It is necessary to make intervention efforts to increase the readiness of CBOs before further collaborative efforts are carried out.

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